The American Journal of Pharmaceutical .... Education ....

THE OFFICIAL PUBLICATION OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.

It is not really what we accomplish in life but rather what we stand for that counts.—Eugene O. Leonard.

Volume V *April, 1941* *Number 2*

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[illegible] was admitted to the Association

THE AMERICAN JOURNAL

-- OF --

PHARMACEUTICAL EDUCATION

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PROCEEDINGS OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

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American Journal of Pharmaceutical Education

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Address Prof. Zada M. Cooper,
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The American Institute of the History of Pharmacy

GEORGE URDANG
University of Wisconsin

On January 22, 1941, six men meeting in the classroom for pharmacognosy of the School of Pharmacy of the University of Wisconsin, founded the American Institute of the History of Pharmacy. These men were:

1. The Director of the School, Dr. Arthur H. Uhl, whose vivid interest initiated the foundation;

2. The Director Emeritus, Dr. Edward Kremers, the well known American pioneer of pharmaceutical science and history who in more than fifty years of indefatigable work created the fundamentals to build upon;

3 and 4. Drs. Louis W. Busse and Lloyd M. Parks, two younger members of the faculty representing the academic youth of American pharmacy;

5. The Secretary of the Wisconsin Pharmaceutical Association, Mr. Jennings Murphy, representing the pharmaceutical practitioners;

6. The former Director of the German Society of the History of Pharmacy and Editor of the Pharmazeutische Zeitung, Dr. George Urdang, whose earlier work and European experience recommended him for the task given.

The "Institute" represents a combination of the stable institution commonly understood by this name, and an association. There is—until now—no fund guaranteeing its work and continuance. For the time being its existence and development depend entirely on membership fees and donations of individual groups or persons.

What are the tasks of the American Institute of the History of Pharmacy? Why has it been founded at Madison, Wisconsin?

Up to the present time the general trend to organize and utilize historical research and knowledge, becoming obvious during the last decades in almost all sciences and professions, has not been realized in pharmacy.

There are societies of the history of pharmacy in France and in Germany. There is a University Department for the history of pharmacy combined with a museum at Basel (Switzerland) under the excellent leadership of Dr. J. A. Haefliger and there are many collections of pharmaceutical antiquities in all countries of the civilized world, among them those brought together by the American born pharmacist, Henry S. Wellcome, and preserved in the Wellcome Museum

at London. As to the United States, the collections in the Boston, Minnesota, New York and Philadelphia Colleges of Pharmacy and at Wisconsin, the "Ancient Pharmacy" of E. R. Squibb & Sons in New York, and the Lloyd Library in Cincinnati have to be mentioned especially. The American Pharmaceutical Association has had its section on historical pharmacy since 1904, gathering interested members of the profession at the annual meetings. It has furnished a place for reports on pharmaceutico-historical work.

What America and what the world lacks is a working center for all pharmaceutico-historical information and work. Such a center would have:

1. To aid in the collection, selection, arrangement and exhibition of pharmaceutico-historical material and—as far as possible—to catalogue and to inventory it;
2. To give the research worker in the field of historical pharmacy the opportunity to discuss his projects, to get advice on literature and to publish the manuscripts concerned;
3. To furnish information and means for historical instruction at the colleges of pharmacy;
4. To furnish material for popular pharmaceutico-historical information directly to the general public (journals, newspapers, etc.), or to individual pharmacists for use in their social or professional relations;
5. To cooperate with the historians of the related sciences and professions, especially of medicine, in order to promote the mutual scientific, professional and social understanding and progress derived from such a cooperation.

For everyone within the profession of pharmacy who knows its real objectives and genuine needs, these statements about the tasks of an Institute of the History of Pharmacy scarcely require an explanation. They are but the obvious confirmation of the fact that finally professional pharmacy has become conscious of its proper place within general culture and intends to draw the practical conclusions.

There can be no doubt about the educational value of historical knowledge. What we are using and building upon in the present has been produced and grown up in the past, and we will never be able to provide intelligently for what we want to come in the future if we do not know what it—in origin and intention—was supposed to involve and achieve.

The educational value of history to pharmacy is of very great importance. Pharmacy is on the defensive. It has lost terrain and recognition which have to be regained. Thus pharmaceutico-historical education cannot be restricted to the

pharmacists. It has to be extended to the related sciences and professions and finally to the public at large.

Naturally the educational methods and objectives are different for each group. The pharmacist and the scientist has to obtain an intimate knowledge of the past and the profession, the layman an informative survey. The first should know the details in order to be aware of what pharmacy as such and in its development was, is, and has to be. The other should be interested in and by highlights in order to appreciate what pharmacy meant and means as far as public welfare and general culture is concerned.

If there is a way of creating and maintaining professional ethics, it is by making it clear to all the advantage or the disadvantage of the service the members of the profession have to render. It is the recognition of this ethics which has always meant the blossom and the neglect of which has meant the decline of the profession.

It cannot be said clearly and distinctly enough that the American Institute of the History of Pharmacy does not intend to monopolize pharmaceutico-historical research and teaching. On the contrary it belongs to its foremost tasks, definitely stated in its Constitution and By-Laws, to stimulate and promote research, collecting and teaching wherever and however it can be done.

The aims of the Institute may be achieved in the following ways laid down in its Constitution:

a. By issuing publications devoted to the results of pharmaceutico-historical research both within and without the Institute, and also by essays that offer the pharmaceutical practitioner interesting historical information;

b. By placing at the disposal of the individual pharmaceutical practitioner as well as of the local, state, and national pharmaceutical associations a pharmaceutico-historical service the object of which shall be to supply them with material needed for informatory professional talks in clubs and meetings and for publication in the general press;

c. By providing a clearing house of pharmaceutico-historical thought and instruction, with the express purpose of lending its authority and support to teachers and the teaching of the history of pharmacy in order to develop and guarantee, within the Americas, academic courses in the history of pharmacy of some uniformity in principle and direction and of the highest possible standard;

d. By organizing historical meetings and exhibits;

e. By granting historical awards.

In this paragraph the meaning of the word "Pharmacy"

is used as representing the sum total of professions, vocations and avocations that provide the medicinal supplies as based on scientific knowledge and aiming at the promotion of public health.

"By 'History of Pharmacy' is understood the historical development of the medicinal supplies, including the rise and growth of the professions, trades and sciences concerned. The sciences should be made subordinate to the history of pharmacy not as to their own special or general development, but only as to the role played by them within pharmacy."—Constitution and By-Laws of the A.I.H.P., article 1.

A few words about the cooperation of the Institute with the historians of the related sciences and professions may not be amiss.

There are so many questions of common interest to the history of pharmacy on the one hand and that of medicine, chemistry, etc., on the other that an Institute of the History of Pharmacy of necessity has to cooperate with the historians of the sciences and professions mentioned.

The fact that until now pharmacy in America has not found a centralized place for the cultivation of its history has deprived all parties concerned of the possibility of a combined effort on a common ground and of the results to be obtained by such an effort. It is regrettable that of the representatives of the sciences and professions related to pharmacy apparently only a very few have recognized the gap and what it meant to them. Their appreciation will probably be great when offered a new and unexpected source of instructive information. Thus a new scientific relationship will be created which undoubtedly will fortify and enlarge the understanding, good will, and good relationship between pharmacy and the related sciences and professions.

The American Institute of the History of Pharmacy does not intend to be and to act as a glorified and glorifying place of worship of the past. Its objective is to make the past of pharmacy an active agent in the present and a guide for the future. It is for this reason that the Constitution and the By-Laws of the Institute place its work, yes, its very existence, into the hands and under the control of the whole of the pharmacy of today. Devoted to the whole of pharmacy, the scientists as well as the practitioners, the wholesalers and the manufacturers, the Institute offers itself to all of them. Whether and how the Institute will function, approach and reach its goals will depend to a very great extent on the

kind, degree, and continuance of cooperation on the part of American pharmacy in all its branches.

It is understood that this general cooperation and control can be achieved only on the basis of a very democratic Constitution of the Institute. There are provided five kinds of membership: 1. Active individual members; 2. Constituent members; 3. Collective members; 4. Supporting members; 5. Honorary members.

All kinds of members except the honorary members are to be elected by a majority vote of the governing body, namely, the Council of the Institute. Honorary members are to be elected by a majority of members present at the annual meeting on nomination by the Council.

1. *Active Individual Members.* Any individual residing in the Americas shall be eligible for active membership and entitled to all the benefits resulting from this membership including the publications issued by the Institute for distribution to the members. The annual (minimum) fee is $5.

2. *Constituent Members.* Any representative state or national pharmaceutical organization in the Americas shall be eligible as a Constituent Member and belongs by virtue of this membership to the Council of the Institute in which it has to be represented by a delegate. The idea is that these state or national organizations of pharmaceutical scientists, practitioners, wholesalers, and manufacturers, in their totality representing the whole of pharmacy in all its aspects, have to be given not only an opportunity to join the Institute but to help to direct and to control it. The annual (minimum) fee is $25.

3. *Collective Members.* Any local organization in the Americas connected with or interested in pharmacy shall be eligible as a Collective Member. This group of membership has been created for two reasons: First, in order to give the local organizations an opportunity to profit from the facilities and services of the Institute and to receive the publications concerned, and second, in order to make it possible for them in joining the Institute to fulfill a duty of professional honor and responsibility. The annual (minimum) fee is $10.

4. *Supporting Members.* Any individual, group, or firm willing to foster the objectives of the Institute shall be eligible as a Supporting Member. A Supporting Member shall have the privilege to attend not only the general meetings of the Institute but also the meetings of the Council for the purpose of giving advice and making suggestions.

In formulating this article of the Constitution its authors wished to offer to those in any phase of the pharmaceutical industry or wholesale business willing to promote the ideals and objectives of the American Institute of the History of Pharmacy a special way for doing it. The special privilege of attending the meetings of the Council is given to them not only

for the sake of their own direct information but also in order to make the advice and special experience of the members of these groups available to the Institute. The annual (minimum) fee is $50.

As has been mentioned the Council is the governing body of the Institute. Its duties are in brief the supervision of the affairs of the Institute, the election of members of all kinds, the proposal of honorary members and members of the Council, the filling of vacancies in offices for the remainder of the period, the appointing of committees, the inviting of lecturers, the granting of awards, and the deciding of matters that for any reason cannot be acted upon at an annual meeting.

This Council shall consist of the officers and past presidents of the Institute, the delegates of the Constituent Members, and not more than ten American pharmacists with special historical interest.

The officers in the Council guarantee the continuance of work, the past presidents the continuance of administrative experience, and the Constituent Members the consideration of the various points of view of the various state or national pharmaceutical groups. The American pharmacists with special historical interests are expected to assist the Director of the Institute in his actual work by their own contributions as well as by suggestions and by bringing to his attention what is going on in their local districts. It is for this latter purpose that these members of the Council are taken from different parts of the United States. Their number is restricted to ten in order to prevent the Council from becoming too large a body.

The officers of the Institute shall be a president, three vice presidents, a secretary, a treasurer, and the director of the Institute who simultaneously shall be the editor of the publications issued by the Institute.

All of the officers as well as the ten members of the Council mentioned above are to be elected at every second annual meeting by a majority of the members present.

The president is the responsible representative of the Institute. He determines the time and place of the annual meetings and arranges the order of business. He may call special meetings of the Council and presides at all meetings of the Institute and Council. Being responsible for the program of

all meetings, the president has the power to accept or reject any paper and to set the time limit for each.

The tasks of the Director of the American Institute of the History of Pharmacy are set forth in the Constitution as follows:

"He shall conduct the pharmaceutico-historical work of the Institute, edit whatever publications the Institute may decide to issue, and represent the Institute in its relations to other Institutes or Associations with historical objectives in the field of medicine and science. He shall render an annual report on the activities of the Institute including his plans for the next year's work. He shall keep in close touch with the members of the Council and collect all data concerning pharmaceutico-historical activities in the Americas and, as far as possible, all over the world."—Constitution of the A.I.H.P., article 6.

The present officers of the American Institute of the History of Pharmacy are:

1. President: Dr. Arthur H. Uhl, Director of the School of Pharmacy of the University of Wisconsin, Madison, Wisconsin;
2. Honorary President: Dr. Edward Kremers, Director Emeritus of the School of Pharmacy of the University of Wisconsin, Madison, Wisconsin;
3. First Vice president: Dr. B. V. Christensen, Dean of the Ohio State University College of Pharmacy, Columbus, Ohio;
4. Second Vice president: Dr. Rufus A. Lyman, Dean of the University of Nebraska College of Pharmacy, Lincoln, Nebraska;
5. Third Vice president: Dr. Leon J. Lascoff, Retail Pharmacist, New York.
6. Secretary and Treasurer: Mr. Jennings Murphy, Secretary of the Wisconsin Pharmaceutical Association, Milwaukee, Wisconsin.
7. Director of the Institute: Dr. George Urdang.

The following American pharmacists with special historical interests have accepted seats as Members of the Council of the American Institute of the History of Pharmacy:

Dr. Conrado F. Asenjo, Research Chemist at the Government of Puerto Rico School of Tropical Medicine, San Juan, Puerto Rico;
Mr. Willis T. Bradley, Instructor in Languages and History, Massachusetts College of Pharmacy, Boston, Massachusetts;
Dr. Roy Bird Cook, Retail Pharmacist and Secretary of the West Virginia Board of Pharmacy, Charleston, West Virginia;
Dr. Edward J. Ireland, Professor of Pharmacognosy and Pharmacology, College of Pharmacy, Loyola University, New Orleans, Louisiana;
Dr. Charles O. Lee, Professor of Pharmacy, School of Pharmacy, Purdue University, Lafayette, Indiana;
Mr. Oscar Rennebohm, Retail Pharmacist, Madison, Wisconsin;

Prof. Wortley F. Rudd, Dean of the School of Pharmacy, Medical College of Virginia, Richmond, Virginia;
Dr. Hugo H. Schaefer, Dean of the Long Island University, Brooklyn College of Pharmacy, Brooklyn, New York.

All the officers mentioned as well as the members of the Council have to be confirmed at the first general meeting to be held at Detroit this year during the time of the meeting of the A.Ph.A.

The Rubicon has been crossed. An idea is going to be realized. Its failure or its success will be not so much the failure or the success of those who made the venture as of those who should be served by its realization.

Pharmacy in the American Association for the Advancement of Science

GLENN L. JENKINS
College of Pharmacy, University of Minnesota

The meetings of the pharmacy sub-section of the Association have grown in interest and value each year since pharmacy became an integral part of this great association. The increase in the number and influence of scientific workers in pharmacy assures the continued progress of the sub-section, a better integration of pharmacy with the other sciences, and a better interpretation of scientific work in pharmacy to that of other scientists, to pharmacists and to the public.

The American Association for the Advancement of Science

The Association was formally organized in 1848. The first meeting was held in Philadelphia in September of that year. The 461 members included all of the leading American scientists of the time. The membership at the end of 1940 was slightly over 21,000 and includes all of the leading American scientists of our time. The Association occupies an unique position. There is no other organization in the world covering the whole field of science that compares with it in the number of scientists which it serves. It is made up of about 180 affiliated and associated societies, each of which serves restricted fields of science, with a total membership including duplications of over 950,000. The government of the Associa-

tion is vested in a Council of nearly 250 members made up largely of two councilors from each affiliated society having more than 100 members who are fellows of the Association. Thus the Council represents all fields of science and is a representative and democratically selected body. The American Pharmaceutical Association has two representatives on the Council since it is an affiliated society. Those who have served as A.Ph.A. council members are:

John C. Krantz, Jr.	1934-'37
Wortley F. Rudd	1938
E. F. Kelly	1938-
Glenn L. Jenkins	1939-

The American Association of Colleges of Pharmacy is an associated organization but it cannot have representation on the Council since its membership is institutional and not individual. The American Pharmaceutical Association and the American Association of Colleges of Pharmacy sponsor the pharmacy sub-section.

The Pharmacy Sub-section

The pharmacy sub-section, which is a division of the medical sciences section, was organized in 1934 largely through the efforts of Dr. Henry B. Ward, then Permanent Secretary of the A.A.A.S., Dr. Earl B. McKinley, Dr. E. F. Kelly and Dean Rufus A. Lyman. The first meeting sponsored by the subsection was held in 1935. At least one and usually two meetings have been held each year since that time. These meetings are planned and developed by a program committee consisting of three members appointed by the Executive Committee of the Council of the A.A.A.S. Members of the program committee are appointed for a term of three years, one member being appointed each year so that the committee has some permanence. The members of this committee and the committeemen since the organization of the sub-section are:

John C. Krantz, Jr.	1936-'37	Chairman 1935-'36
Rufus A. Lyman	1937-'39	Chairman 1937
Wortley F. Rudd	1936-	Chairman 1938
Glenn L. Jenkins	1937-	Chairman 1939-
Edward Spease	1938-'40	
J. Allen Reese	1941-	

One of the objectives of the Association is to integrate and promote science as a whole. A major purpose of the pharmacy sub-section is to promote scientific advancement in the sciences

of pharmacy along with and as a part of the general scientific progress. At the same time, it is desirable to secure more widespread recognition of pharmacy as a science and profession by having our research workers meet and mingle with workers from other sciences and professions while contributing our share to the whole scientific effort.

The Pharmacy Program

The programs of the pharmacy section are usually arranged by the chairman of the program committee who also serves as secretary. At the time of a meeting, it is customary to have some local pharmaceutical scientist serve as secretary of the meeting to look after arrangements. The number of sessions scheduled depend on the number of papers on the program. Some programs have consisted of varied papers while others have been built around a central theme and can properly be called symposia. Any original contribution to scientific progress is generally acceptable. Papers are limited to about 15 to 20 minutes for presentation with about 10 minutes for discussion. Authors of papers are required to turn in the original copy of the paper at the time of the meeting. Abstracts are required at least two weeks before the meetings so that reports and news releases may be prepared. It is necessary to plan sessions and programs well in advance since the general secretary of the Association must arrange for many groups and papers. Thus at the Philadelphia meeting in 1940, 67 meeting rooms were arranged for and supplied with necessary equipment, at times 36 sessions were being held simultaneously, and the programs contained 2,164 titles of addresses and papers.

Membership in the Association and the Pharmacy Sub-section

The membership dues of the A.A.A.S. are $5.00 per year. All members receive with their annual membership a subscription to the weekly, *Science,* or to the *Scientific Monthly.* Each member may designate his choice of field of interest and will be assigned to that section. Members on nomination may be elected fellows of the Association by the Executive Council in recognition of their having contributed to the advancement of science through the publication of original research or in other significant manner. All members who designate pharmacy as their field of interest are members of the pharmacy

sub-section. The recently issued Summarized Proceedings of the A.A.A.S. shows that many leaders in pharmacy have designated other fields of science as their chief interest. The writer thought that they were denying their profession until it was realized that they had joined the Association before the pharmacy sub-section was organized. These men should change the designation of their field of interest when they next pay dues.

Young men in pharmacy as in all professions and sciences often say that they have difficulty in becoming known. They would not find it so difficult if they would join the associations representing their profession (e.g., the A.Ph.A.), their chief field of interest (e.g., A.C.S.) and the whole field of science (the A.A.A.S.). While promoting their own advancement, they would have the satisfaction of knowing that they were contributing to the progress of pharmacy and all scientific endeavor. The writer recently nominated over 240 teachers in colleges of pharmacy for membership in the Association. It is hoped that a large majority of them will become members for their own benefit and for the benefit of pharmacy. By doing so, they will lend their influence and effort to increase the eminence of pharmacy in the greatest cosmopolitan organization of science, the American Association for the Advancement of Science.

The Significance of Rho Chi and the Responsibilities of Its Members*

CHARLES H. ROGERS
College of Pharmacy, University of Minnesota

I had hoped that my time this evening would permit me to reminisce quite informally about my initiation and experiences as a member of our parent Aristolochite Society at the University of Michigan. This, I regret I cannot do. I am privileged, however, to talk with you for a few minutes about several educational and fraternal matters that are of interest to me.

All members of our body politic are engaged in a process

*Read before the Rho Chi Society at the 1940 meeting at Richmond.

of learning and relearning. Some thirty million of them have turned to organized education with the hope that it will give them the magic key with which may be opened the doors of opportunity leading to that indefinable state called *success.* Approximately one and one-half million of our youth are attending so-called institutions of higher learning and, in the United States, this number represents about one out of every seven young people between the ages of eighteen and twenty-three. In England, only one out of fifteen hundred persons in this age group continue their education beyond high school, whereas in Scotland about twice that number (one in seven hundred) are attending universities. Because of their faith that men are ennobled by understanding, most of our institutions for advanced study have accepted many students whose capacity is such that their factor of probability of scholastic success is very low indeed. Many of these have reached their intellectual saturation point but not realizing that fact and with a blind faith in the supposed magic powers of university professors to impart knowledge, they present themselves for supersaturation. The vast hordes of students who enter the portals of our universities every year, have presented us with the serious problem of how to take care of them intellectually, socially, and physically. Because of the heterogeneity of this group, its needs, in so far as quality and quantity of course offerings are concerned, have necessitated the creation of most elaborate curricular set-ups. I am told that the arts college of one of our universities offers over six hundred different courses. To make a selection from this number would in itself be confusing to even a high honor-point-ratio student and, when we frankly admit that our advisory systems are very far from being efficient, the student with a low college ability rating is not only confused but hopelessly bewildered. The rapid growth in the number of course offerings, resembles a carcinoma in that we find cell division and multiplication without provision for elimination. Because of the vast quantity of raw material that is fed into our production line, it has been necessary in many instances to speed up our educational machinery to such a point that those working in the line have been forced to pass mediocre jobs and call them good ones. Too frequently the finished product does not justify the expense of production and this fact has been responsible for some laymen referring to our combined efforts

as *the educational racket.* Possibly this is just a way to gain support to movements to cut state and national appropriations for education; possibly educational funds appear to be the most vulnerable ones in which to effect so-called *savings* necessary to the payment of old age pension and social security bills; but, be that as it may and notwithstanding, it is my opinion that in the near future all forms of publicly supported education will be called upon to present a case justifying their existence in the elaborate and ever-increasing forms as we have them today. Some are going to have a difficult task doing so but I am absolutely confident that pharmacy will be prepared. It is well known to all of us what must be done to establish proof that pharmaceutical educational institutions are indispensable to a new and fact-finding economic and social order. First, our schools must exercise greater selectivity among those who would enter our colleges. It is just as true today as it ever was that silk purses cannot be made from the aural appendages of sus scrofa, var. domesticus. Second, we must, if necessary, rearrange our curricula in such a way as to be able to defend each and every course in it on the grounds that it is necessary to the cultural and professional implementation of our students. Third, we must be able to show that the pharmacist contributes in a large way to creating and maintaining the health of the people and that in order for him to so function, a thorough course of training and experience must be provided. Today there is a larger number of laymen than one realizes who believe that about all a pharmacist does for the patient is to pour medicine from one bottle into another, keep a few records for the doctor's convenience, and run a general merchandise store. Not only must we be prepared to answer again the same old question: are four years of university training necessary to the intelligent and efficient functioning of a pharmacist but we must be able to demonstrate that we are doing an efficient educational job. If the length of the shadow of our work shows our magnitude, we will have nothing to fear. If it does not, we may find our autonomous existence in jeopardy.

Education is unquestionably one of our oldest professions and about it, possibly, we know the least. For centuries teachers have sought ways and means of stimulating scholarship. In olden days the monk, recluse, and philosopher needed no particular inspiration other than the Divine because his vo-

cation was also his avocation. Such was the case with those who sat at the feet of these masters. How the picture has changed! I venture the assertion that not one student in ten is functioning up to the limit of his capacity. This may be caused in part by a paucity of inspirational instruction. Is it not astounding to find so many teachers who are so vitally interested in their subjects but who are also so totally disinterested in students and their problems? That all human actions are prompted either by the hope of reward or fear of punishment, is very nearly axiomatic. In this supposedly enlightened day we prefer to develop stimuli that appeal to the former rather than the latter sense. When discouraged with the results of our inspirational efforts, we frequently resort to methods that have the semblance of being coercive ones. The use of fear of failure, suspension, or expulsion, may be justified in some instances but I believe that the seeds of wisdom sown by a professor who is beloved and admired will germinate more rapidly and bear more lasting fruit than those disseminated by an instructor who is respected but also feared. The one mildly coercive stimulus to scholarship of which I approve and which has been instituted in several states within the last three years, is the requirement that all applicants for licensure examination must submit an official or certified transcript of their scholastic record to their state board. Regardless of what disposition is made of these transcripts by the boards of pharmacy, I do know that our students do work harder to avoid any impairment of record than they did before this regulation went into effect. The results of this experiment in several states have been so gratifying that I hope it will not be long before this will be required by the pharmacy boards of all states.

Appreciating the incentive-value of holding out a reward for superior scholarship, nearly all branches of higher education have inaugurated honor societies. We find them in the arts, the sciences, and in the humanities. Possibly because of their effectiveness in stimulating greater student effort or possibly because some academic and professional groups have sought to *keep up with the Joneses*, a large number of honor societies have mushroomed into existence. At the University of Minnesota there are approximately forty-five, embracing almost every specialty from band, social, and rifle-marksmanship to engineering, law, medicine, pharmacy, and even Nor-

wegian. However, only nineteen were included in the 1939 Cap and Gown Day Convocation Program. Is it possible that seats of honor have been created as a solace for those who could not make the *big six or eight?* If such should be true, we could reverse the old adage and truthfully say that *in numbers there is weakness* and not strength. In the professional fields the picture is somewhat different. If I could have my way (which I cannot), our universities would not recognize more than one honor society in any one major field. Then election to membership by one's own associates would indeed be a distinction. I sincerely hope that pharmacy will always have only one honor society and I hope it will always be Rho Chi.

Election to Rho Chi is definitely a reward for achievement in scholarship; achievement not infrequently attained by self-denial, gruelling hard work and sacrifice. To me, its insignia stands for something more than a mere badge of distinction for past performances. To me it has the signification that its wearer is an intellectual individual who has the potential capacity to promote the advancement of the pharmaceutical sciences and the profession of pharmacy. He stands before me as a man pledged to actively use his talents and abilities to further his profession and its work to ameliorate the suffering of the sick. An honor or a distinction divorced from its concomitant responsibilities is indeed an empty one. Lest we unmindfully forget, we, as members of one of the finest of these societies, have accepted our responsibilities and have made our commitments to uphold the ideals and traditions of an ancient and honorable profession and to keep our candles always burning so that together their light may dissipate the shadows of fear, superstition, and ignorance.

Dr. Robert L. Swain's Influence on Pharmaceutical Journalism*

RAOUL D. KEIM
Vice President, E. R. Squibb & Sons

It has been my privilege at various times to pay tribute to men who have made outstanding contributions in various fields of activity. However, I feel that an exceptional privilege has been granted to me through the invitation I received, to speak to you this evening of Dr. Robert L. Swain's outstanding work in the field of pharmaceutical journalism. My reason for emphasizing this fact is that I, personally, have always had the highest regard for Dr. Swain's outstanding ability, and I do know that the contributions he has made to promote the welfare of the drug industry as a whole and to establish higher standards in professional pharmacy, in his editorial capacity, have been most constructive and helpful to professional retail pharmacists, wholesale druggists and manufacturers in our industry.

In casting around for some yardstick to apply to Dr. Swain's work in pharmaceutical journalism and to give you an evaluation of it, I do not believe that a higher compliment could have been paid to Dr. Swain than the editorial comment that appeared in the October 1940 issue of the American Journal of Pharmaceutical Education by Dr. Rufus A. Lyman, Dean of the College of Pharmacy of the University of Nebraska, and who is also editor of that publication.

I am sure there is no one in the country better qualified to speak in a more authoritative manner of Dr. Swain's work. Please let me quote that editorial comment to which I refer:

> "Just as at times I have an urge to give the pastor of my church a personal expression of appreciation for the message of courage which he has delivered as I sat in the pew, so do I feel the urge to express my gratitude to a brother editor for the inspiration which he gives me as I sit at my work table. No single man gives me a

*This address was delivered at the testimonial dinner tendered Dr. Robert L. Swain on November 28, 1940, in New York City, on the occasion of his receiving the Remmington Medal. It is printed in this journal at the request of the Editor in recognition of Dr. Swain's contribution to pharmaceutical journalism.

thrill of exaltation more times in a year than does Robert L. Swain, when each week I turn with eagerness to *"Your Pharmacy and Mine"* on the editorial page of Drug Topics. In the September 23rd number of that journal, he wrote 'I am one of those persons who feels that the salvation of pharmacy as a worthwhile professional pursuit depends almost entirely upon the integrity and excellence of its educational program. I want to see the retail drug store pull itself up to the level of modern pharmaceutical education, but I doubt if this can be done if the colleges and the stores go about their business more or less unmindful of each other.' The inspiration for this statement by Dr. Swain came in a letter in which the writer declared the interests of pharmacy would be better served if in the selection of teachers it was insisted that the prospective teacher should be experienced in the operation of retail drug stores and thus familiar with the problems with which pharmacy is faced.

"Every sentence in Dr. Swain's statement is brimfull of common sense and the truth of each, no one can question. No man in American Pharmacy is more versatile than Dr. Swain. He lives with, understands, and is amazingly sympathetic with each and every phase of pharmaceutical endeavor. His word carries great weight with all groups and his constant support of pharmaceutical education as a basic factor in pharmaceutical progress has had and is having a powerful influence in bringing about cooperation in the pharmaceutical industry and the support of education by that industry."

It seems to me that Dr. Lyman has pretty well exhausted the subject because he uses one statement which, I think, is a complete explanation of Dr. Swain's influence as an editor, and I repeat this sentence because I wish to give this just tribute its proper emphasis: "No man in American Pharmacy is more versatile than Dr. Swain. He lives with, understands, and is amazingly sympathetic with each and every phase of pharmaceutical endeavor."

As you all probably know, Dr. Swain was editor of the Maryland Pharmacist, official publication of the Maryland Pharmaceutical Association, from 1925 until 1934. In the latter year, he became pharmacy editor of Drug Topics and

it was in that year that his column under the heading "*Your Pharmacy and Mine,*" first appeared on the editorial page of that nationally-known and highly-appreciated business paper in the drug industry.

In February 1939, the mantle of editor of Drug Topics, carried for so many years by that highly-respected and greatly-beloved writer and editor, Jerry McQuade, fell on the shoulders of Dr. Robert L. Swain and it is interesting to refer back to Dr. Swain's pledge and platform from which I quote now:

> "I have long striven for an awakened consciousness on the part of pharmacists so that they might attain that place in their communities to which their training and professional functions richly entitle them. I have worked for the economic improvement of pharmacy, so that there might be brought about that stability and security which would give new life and vigor to its professional function.
>
> "I am conscious that, with the power of *Drug Topics* behind me, and with the large *Drug Topics* organization wholeheartedly assisting me, my opportunities to work for the betterment of pharmacy and for the improvement in the economic conditions under which it is carried on will be greatly multiplied. I am conscious, too, that my objective will represent no material change in editorial policies. The things which I believe, Jerry McQuade believed with all his heart. The things for which I will fight, Jerry McQuade fought for untiringly."

In these troublous times I am sure you realize that public opinion today demands more and more factual information and this applies with equal force to pharmaceutical opinion. The many professional and economic problems confronting pharmacy as a profession and the drug industry at large, cannot be understood unless there is complete factual information available with respect to them. Even then it is difficult to visualize these problems unless they are authoritatively interpreted.

It is in Dr. Swain's ability to give such authoritative interpretation to many of the more difficult problems confronting us in our industry that we find the basis of his broadening influence.

I doubt that there is any man in America today who is held in higher regard in the pharmaceutical profession than

is Dr. Swain. I believe that when peace is once again established in the world, his influence will permeate to our neighbors south of us and north of us as well as across the seas.

When Dr. Swain speaks he speaks from an understanding of the problem before him and expresses an honest and courageous point of view.

I know from my long-standing and close acquaintance with Dr. Swain that he could not at any time be induced to lend his name to false propaganda, or to lend his influence to a cause in which he did not have implicit faith, and which he did not believe was in the interest of his profession.

With the current discussions that are going on about the standards of journalism in the daily press, I think it is timely that it should be said that our American free press as a whole, with the possible exception of a small minority, has maintained a very high standard. I believe that also applies to pharmaceutical journalism as Dr. Swain has demonstrated in expressing his viewpoints in his editorial writings. Therefore, I am confident that the drug industry as a whole is thankful that, within its ranks, are men like Dr. Swain who are capable and not afraid of expressing an independent judgment on the vital problems that face our profession and our industry. And I am sure that his colleagues rejoice with him that he has been selected to receive the Remington Medal which is the highest award in professional pharmacy that can be conferred upon anyone.

There is no question in my mind that we as loyal American citizens, who must guard the great heritage which has been placed in our hands by our illustrious forefathers, must be willing to fight for it. To retain our representative democracy and to be true to our American political philosophy, we must have an honest, independent, courageous free press and that also applies to pharmaceutical journalism.

By the very nature of things and the problems we have to face in our industry, controversies are bound to arise in our own ranks. There are bound to be differences of opinion between ourselves and governmental agencies at times, and frequently occasions will arise when these controversies should be discussed freely and openly so that conflicting viewpoints can be, and should be, the subject of honest and courageous editorial interpretation.

In this respect, I feel confident that Dr. Swain will con-

tinue to carry on and make real contributions with the objective of helping to solve the problems that face our profession and our industry, as well as to stimulating pharmacists to a greater and more sincere appreciation of their professional functions and a realization of their professional responsibilities.

Anyone who can stimulate a group to sound thinking, of course, is bound to influence their actions and I believe that the increased interest which is now being shown on the part of pharmacists in general toward the raising of the standards of their profession and their professional and consumer relations, is largely due to the direct impetus of Dr. Swain's editorial leadership.

In view of the broad and constructive viewpoints Dr. Swain has incorporated in his editorials, I am indeed very happy tonight to pay my tribute to him and to express the hope that his interest, not only in the continued welfare of the retail drug trade but also in the continued prosperity and growth of the wholesale and manufacturing branches of our industry, will increase and broaden with the years, and that his powers of expression will achieve still greater heights so that his influence upon pharmaceutical journalism, the professions and the drug industry as a whole, will continue to be profoundly beneficial.

This will mean much to all of us who are deeply interested in promoting not only the integrity and solidarity of pharmaceutical opinion, but a greater appreciation, on the part of the American public, of pharmacy as a profession and the contributions that are also being made to the welfare and well-being of our nation by the other branches of our industry.

Every board secretary has found his enforcement program harder to carry forward simply because too many pharmacists show by the conduct of their own stores, that they do not believe in the purpose and objectives of the pharmacy laws. If we insist on kicking the laws around, we cannot look for respect for them on the part of others. Our every deed should show that we regard pharmacy as a serious public health profession. Once we prove that we really believe it, the public will believe it, too.—Robert L. Swain.

Pharmacy Week*

EDWIN J. BOBERG
Eau Claire, Wisconsin

On this sixteenth observance of National Pharmacy Week, more than one hundred thousand registered pharmacists in the United States send you their greetings.

We visit the drug store almost daily for our tooth-paste, razor blades, toilet articles, sodas, stamps, and hundreds of the usual household needs which we know are available almost any hour of the day or night. It is only when illness strikes some member of the family that we give a second thought to the pharmacist as an important member of a public health profession. Then we bring to him the prescription which the physician has written, with full confidence that our pharmacist has the knowledge, the ability, and the skill that will enable him to compound the medicine exactly as the doctor has ordered it.

The prescription department is the heart of the drugstore. Like the human heart, it has important functions to perform, but the work goes on steadily day after day, so quietly and efficiently that we are inclined to forget about it and overlook its importance.

As children, many of us were attracted by the colored show-globes in the drug store windows. Lights were usually placed behind them, the better to display the brightly colored liquids with their beautiful reds, brilliant greens, bright orange, and deep clear purples. For centuries these colored show-globes have been recognized as symbols of the pharmaceutical profession. They are reminders of the odd-shaped glass carboys used in England years ago as containers for various liquids, and later put into the show-windows purely for display purposes to identify the place of business as an apothecary shop. After a period of retirement, the colored show-globes, mortar and pestle, and other familiar symbols

*This radio address was given over stations at Eau Claire and Wausau, Wisconsin during pharmacy week in October 1940, by Mr. Boberg, who is circuit instructor in that state under the George-Deen Act. (See President Dretzka's letter,—Gleanings from the Editor's Mail.) It is printed here because it is an unusually fine presentation of the service pharmacy renders to the public. Its simplicity, clarity, and dignity is deserving of emulation.—Editor.

are again becoming increasingly evident in the modern streamlined open-front prescription pharmacies of today.

As our youthful eyes looked upon these globes with awe and admiration, we wondered and speculated about the mysterious and perhaps priceless fluids that attracted our attention. What were these colored liquids? If a scientist asked this question, I might answer that a qualitative analysis would reveal small quantities of various chemical salts dissolved in distilled water. But if my questioner were a poet, or someone of a romantic turn, I might answer that this red and purple and golden glow shining out upon us was the radiation from forty colorful centuries of pharmaceutical history, concentrated in the mysterious essences and elixirs contained within these magic colored globes.

Pharmacy has a long and interesting history, alive with human interest, scientific discoveries, magic, superstitions, alchemy, struggles for improvement, adventure, and romance. We find the apothecary mentioned in the Bible. We find him in ancient Egypt, in Greece, in Rome, in Arabia. We read of the Guilds of the Apothecaries in the Middle Ages in Europe. In all ages and in all parts of the world we find something analagous to the modern art and science of pharmacy. The function of the pharmacist has been recognized as one of prime importance throughout history. What is this function?

Pharmacy is the art and science of preparing from natural sources, the materials used as drugs. It involves the collection, preservation, preparation, compounding, testing, and dispensing of drugs and medicines used in the treatment of disease. In modern times it also comprehends the manufacture of chemical substances by synthetic means. With the addition of biological products and elaborate methods of standardization, the subject of pharmacy has become more complex, and there is greater need for a knowledge of chemistry and other sciences on the part of the practitioner; but basically, the function of the pharmacist is to prepare medicines for those who need them.

The pharmacist keeps abreast of new developments in chemistry, pharmacy, and related branches, by maintaining an adequate pharmaceutical library and reading his technical journals. He often attends pharmacy clinics or institutes.

college post-graduate courses, or "refresher" classes. Or he may take an active part in the evening pharmacy classes and open forums for professional advancement now being offered by many of the vocational schools.

The pharmacist is a specialist. He is trained to know the chemical and physical characteristics of the many drugs, biologics, narcotics, poisons, and chemicals which he handles. He advises the physician on the choice of suitable vehicles, flavors, and solvents for the particular drug or combination of drugs to be administered. He is an expert on the subject of chemical incompatibility and on the technical processes involved in the preparation of drugs. He knows that certain biologicals, such as smallpox vaccine, must be kept at freezing temperature, and that others, such as diphtheria antitoxin, must be stored at a higher temperature. Certain drugs such as digitalis and ergot lose their potency after a certain period. He must exercise every precaution to insure the accuracy and potency of every prescription compounded by him, for he realizes that a human life may be at stake.

The pharmacist is skilled in the techniques required to combine the active ingredients to the best advantage to produce the desired solutions, pills, plasters, suppositories, emulsions, ointments, or other suitable forms of administration. His is the problem of keeping on hand an adequate supply of fresh and potent drugs and medicines for immediate use when the emergency arises.

The pharmacist, however, is not trained to diagnose or treat disease. Do not ask him to prescribe for you. That is the function of the physician, who has specialized in this field and has devoted his life to the study of diseases and their proper treatment. The pharmacist, on the other hand, is trained in chemistry, in the preparation and preservation of drugs and medicines, in the correct methods of compounding, testing, and dispensing the various therapeutic agents used by the physician to treat disease and alleviate human suffering. The wise man will go to the physician for medical advice, not to the pharmacist. For legal advice he will consult the lawyer rather than the physician. And he will not expect the physician or the lawyer to compound his prescription or to supply the same high type of pharmaceutical service as that offered by the well-equipped modern prescription pharmacy.

The history of pharmacy is the history of a highly specialized calling, gradually emerging from its early beginnings, dominated for centuries by magic, superstition, alchemy, and commercialism, but gradually rising to the dignity of a true profession.

Leaders in pharmacy are constantly striving to raise the educational standards. Candidates for admission to the ranks of pharmacy are being examined more closely as to their scientific training, their moral character, and their general fitness.

On this pharmacy week, October 20-26, 1940, your pharmacist rededicates his life to the service of the community. He reminds himself of the duties and responsibilities involved, the glorious history, traditions, and ideals of his profession. And he takes this occasion to remind you that he is your friend, in illness or in health. He greets you with a smile, and stands ready and willing to continue rendering the many services that you have come to expect in your favorite drug store.

"How Efficient Is Secondary School Training In Arithmetic?"*

LLOYD L. BOUGHTON
School of Pharmacy, University of Kansas

In 1928 a set of simple arithmetic problems came to the author's desk through the mail from some source which was unknown at the time and which still is unknown. This author therefore takes no credit and assumes no responsibility for the problems. There were twenty problems in the set, ten on each of two pages. The problems on the second page were considerably more difficult than those on the first page and have not been used. The first page of ten problems, however, has been used each year since 1928, including 1940.

Instruction in pharmaceutical arithmetic at the University of Kansas School of Pharmacy is divided into two courses of two credit hours each. This introductory test has been

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*Read before the Conference of Teachers of Pharmaceutical Economics at the 1940 meeting at Richmond.

given at the first meeting of the first two-hour course which is given to freshmen during the spring semester of the first year. During the preceding semester these students are enrolled in College Algebra, three hours, and in Introductory Pharmacy, three hours. The tables of weights and measures are reviewed in the latter course. However, the problems in the achievement test, if it may be called that, have been well chosen for they require no knowledge of algebra or trigonometry or of any of the tables other than the number of inches per foot.

The ten problems making up the test follow in exactly the same manner as they appear upon the single test sheet. The students are allowed no additional paper but are permitted to use the back of the sheet for figuring if they care to. They are allowed thirty minutes in which to work the problems.

1. A cook found that only 27 out of 36 eggs were good. What per cent of the eggs were bad?
2. Henry takes a step 2 feet and 6 inches long. How many steps does he take in going 17 feet and 6 inches?
3. If ¾ of a clerk's yearly salary is $675, find his salary per month.
4. In September there were 135 pupils in a school, but this number decreased ⅕ during October. How many pupils were there at the end of October?
5. One workman can make a door in ⅔ of a day, and another can make one in ¾ of a day. How many doors can they together make in 6 days?
6. If 15 per cent of a gang of men were discharged and there were 51 men left, how many men were in the gang at first?
7. A file case has 21 drawers numbered from 1 to 21. The even-numbered drawers average 80 cards to the drawer. What is the total number of cards in the even-numbered drawers?
8. If a man working 6 hours a day earns $117 in 3 months, how much will he earn working 8 hours a day for 5 months?
9. Fifteen per cent of the students at a college are seniors. Forty per cent of the senior class are women. If there are 800 students at the college, how many men are there in the senior class?
10. A train required 6 hours for a trip of 200 miles, making 18 stops of 5 minutes each, and one stop of 30 minutes. What was the average speed of the train when in motion?

The students in the class are told that their grade on the test will have no bearing on their final grade in the course but that the quiz is being given for the purpose of determining where special emphasis will be required during the remainder of the course. They are also told that their failure to do well

in the test may result in their having to put in extra time during the early part of the course. Each student is required to write his name on the sheet before handing it in, merely as a record of attendance.

The corrected papers have never been handed back and none of the problems have been discussed at any time with the students. Many have asked concerning the solution of certain problems but the answer has always been that any difficulties involved in the quiz would be taken up as the course progressed. It therefore seems quite fair to conclude that each succeeding class of thirteen since 1928 has not been influenced by preceding classes. Three hundred students have taken the test.

All problems have been graded entirely on a basis of right or wrong. Individual grades have therefore been 0, 10, or some multiple of 10.

There seems little necessity for saying anything about any of the problems. They certainly cannot be considered too difficult for university freshmen. Similar problems are to be found in seventh and eighth grade arithmetic books. The following are taken from one of the newer seventh grade texts[1]:

1. Anna missed 3 examples out of 50. What per cent did she get right? (page 399).
2. If $16\frac{2}{3}$ per cent represents the fractional part of the whole, and $32 represents the part of the whole, what is the whole? (page 400).
3. A tailor sold a misfit suit for $25.50, at a loss of 15 per cent of the cost to him. What did it cost him? (page 426).

The following are taken from an eighth grade text[2]:

1. Mr. Henderson put three quarts of alcohol into the radiator of his car, and filled it up with water. He then found that the liquid tested 12½ per cent alcohol. What was the capacity of his radiator? (page 323).
2. In a certain high school there are 1720 students. One day 86 were absent. What per cent were present? (page 296).
3. 23 per cent of a number is 598. What is ¼ per cent of the number? (page 296).

Figure 1 shows the per cent of each class, from 1928 to 1940, working problems 1 to 10 correctly. The individual problems through the thirteen years are connected by solid lines to show the presence or absence of trend during the period. The dotted line connects the average of per cents by years for the same purpose.

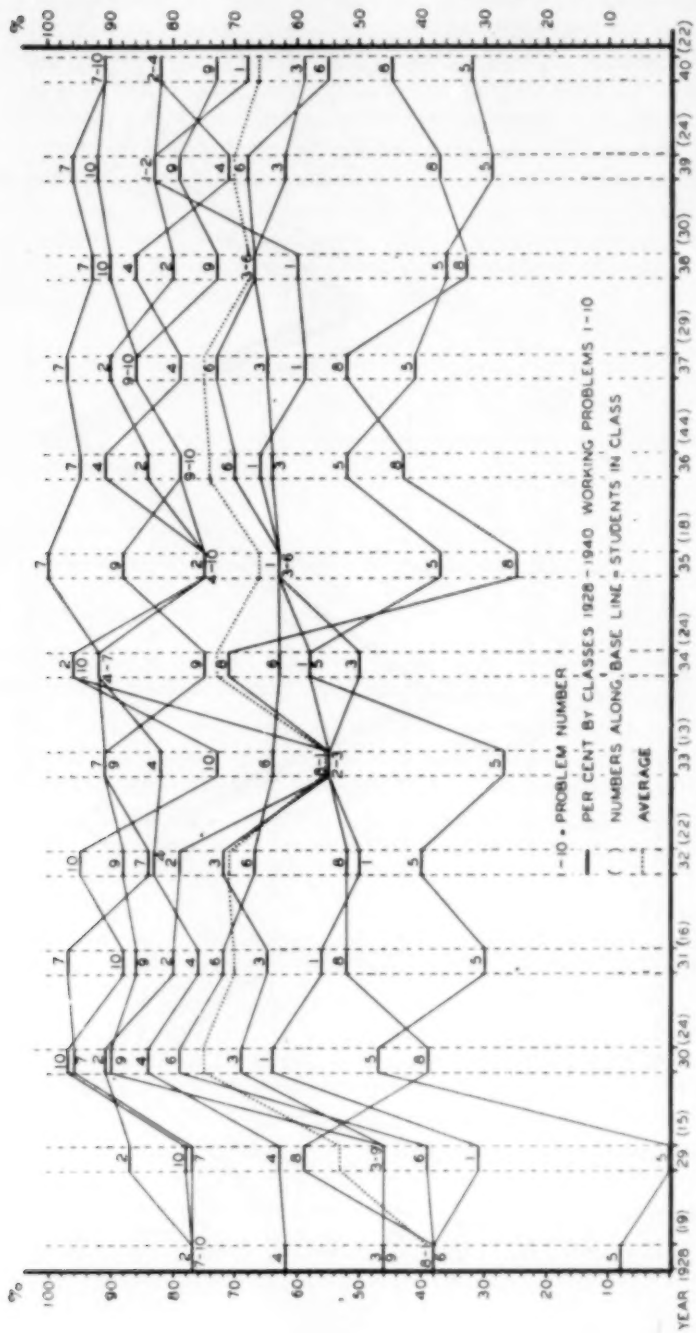
%
100
90
80
70
60
50
40
30
20
10
YEAR 1928 (19) 29 (15) 30 (24) 31 (16) 32 (22) 33 (13) 34 (24) 35 (18) 36 (44) 37 (29) 38 (30) 39 (24) 40 (22)
1-10 = PROBLEM NUMBER
PER CENT BY CLASSES 1928 - 1940 WORKING PROBLEMS 1-10
( ) NUMBERS ALONG BASE LINE = STUDENTS IN CLASS
AVERAGE

FIG. 1

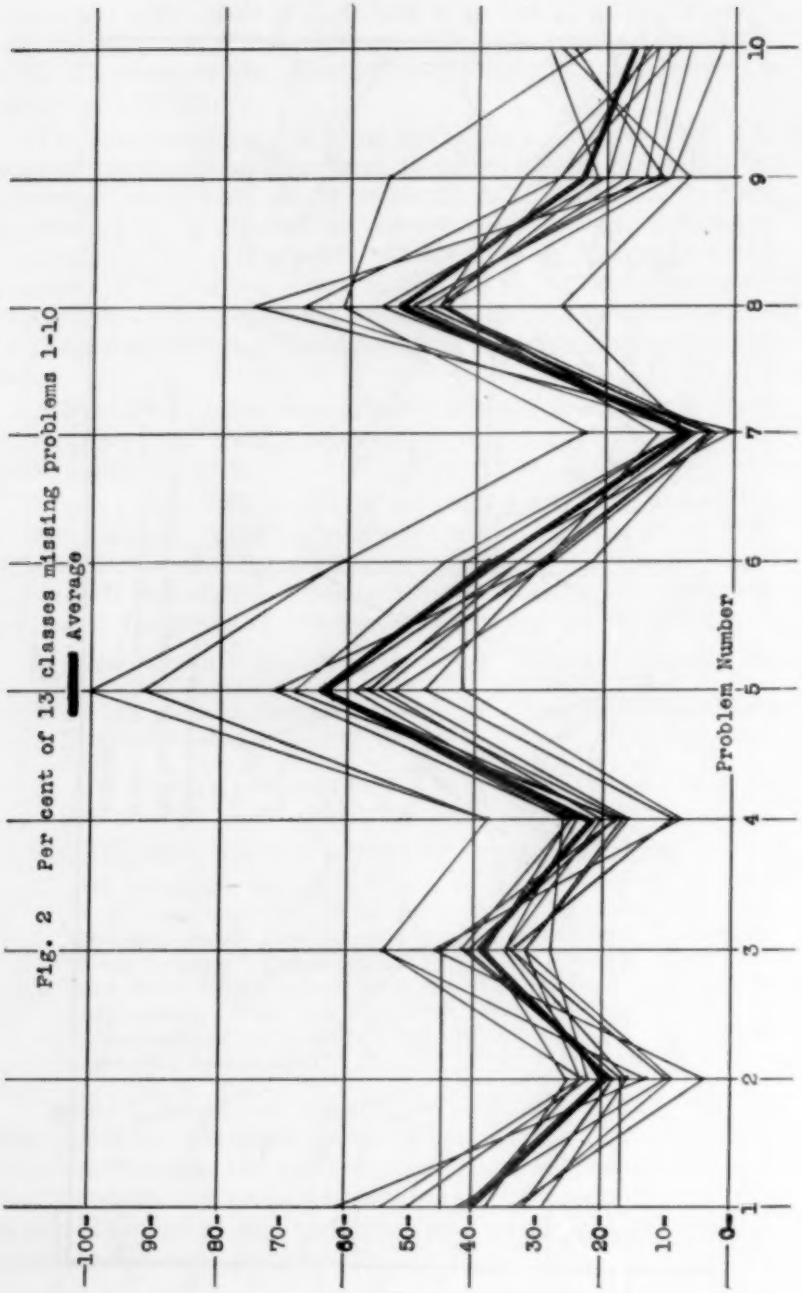
Per cent of 13 classes missing problems 1-10
Average
Problem Number
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10

Fig. 2

Figure 2 shows the per cent by classes missing problems 1 to 10 and indicates quite clearly the difficulty sequence in the ten problems. The heavier line in Fig. 2, while labeled average in the figure, actually shows the per cent of 300 students in the thirteen classes missing problems 1 to 10.

Both figures are largely self-explanatory. There are, however, some interesting points to be mentioned in Fig. 1. First, there is the rather peculiar variation in problem difficulty sequence for the thirteen classes. This is shown more readily in Table I which lists the problem numbers from the most difficult to the least difficult for each year.

TABLE I

PROBLEM DIFFICULTY SEQUENCE

'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	*
5	5	8	5	5	5	3	8	8	5	8	5	5	5
8	1	5	8	1	8	5	5	5	8	5	8	8	8
6	6	1	1	8	3	1	3	3	1	1	3	6	1
1	3	3	3	6	2	6	6	1	3	3	6	3	3
3	9	6	6	3	1	8	1	6	6	6	4	1	6
9	8	4	4	2	6	9	4	9	4	9	9	9	9
4	4	9	2	4	10	4	2	10	9	2	1	4	4
10	7	2	9	7	4	7	10	2	10	4	2	2	2
7	10	7	10	9	9	10	9	4	2	10	10	10	10
2	2	10	7	10	7	2	7	7	7	7	7	7	7

*Difficulty sequence as determined from Figs. 1 and 2 and Table II.

The difficulty sequence determined from Figures 1 and 2 is shown in the last column of Table I. A comparison of all columns in Table I shows that no two of the classes found the problems to have the same difficulty sequence and no class rated the problems as they are rated by all classes in Figures 1 and 2. (Column *, Table I.)

One should expect to be able to rate a set of ten problems in terms of difficulty sequence by giving the test to a class of forty-four students. Fig. 1 shows, however, that it wouldn't be possible to determine even the most difficult or the least difficult by giving the test to one class only. The majority of classes have found Problem 5 the most difficult and Problem 7 the least difficult, but four of the thirteen classes found Problem 8 the most difficult and one class found Problem 3 the most difficult. The majority of classes found Number 7 easiest but some found Number 2, and others Number 10, easiest.

This rather peculiar distribution cannot be explained by the

author. Neither can he explain why only 31 per cent of one class were able to work Problem 1 while 83 per cent of another class were able to work the same problem, or why no one in the class of '29 was able to work Problem 5 while 58 per cent of the class of '34 were able to work it. The variations in terms of maximum and minimum per cent working the problems are shown in Table II. The most important fact shown by this table is that only 37 per cent of 300 students have been able to work Problem 5, and 49 per cent Problem 8. The numbers in parentheses express the difference between maximum and minimum per cent working for each problem. It is interesting to note that this difference is greatest for Problem 5, the most difficult, and smallest for Problem 7, the easiest problem.

TABLE II

MAXIMUM AND MINIMUM PER CENT WORKING-RANGE DURING '28-'40

Problem No.	*	Max. % Working	In Year	Min. % Working	In Year	% of 300 Working
1	(52)	83	'39	31	'29	60
2	(41)	96	'34	55	'33	81
3	(26)	72	'32	46	'28-29	61
4	(30)	92	'34	62	'28	78
5	(58)	58	'34	0	'29	37
6	(41)	79	'30	38	'28	63
7	(23)	100	'35	77	'28-'29	92
8	(46)	71	'34	25	'35	49
9	(45)	91	'33	46	'28-'29	77
10	(24)	97	'30	73	'33	84

*Numbers in parentheses = difference between maximum and minimum.

The dotted line in Fig. 1, which connects the average of per cents working the ten problems in each of the thirteen years, seems to show little evidence of trend except for the first three years where it is up, and for the last four years, where it is down. A study of individual problems through the thirteen years seems to indicate a rather general tendency upward during the first half of the period and downward during the last half, in the ability of freshmen to work simple arithmetic problems.

Problem 1. A rather definite trend upward since '32.
Problem 2. No evidence of trend.
Problem 3. No evidence of trend.
Problem 4. Definitely upward to '34 and downward since then.

Problem 5. The most difficult of the problems, the trend definitely downward since '34.
Problem 6. Rather definite trend downward since '30.
Problem 7. Trend upward to '35, downward since then.
Problem 8. Trend upward to '34, downward since then.
Problem 9. Rather definite trend downward since '30.
Problem 10. Trend downward since '35.

It undoubtedly is not possible to definitely establish a trend in ability from this thirteen year period. It seems safe to say, however, that there is nothing in the data presented herein to indicate any improvement in what seems to be a rather serious situation. Figures 1 and 2 and Table II show quite conclusively that college freshmen are, as a rule, utterly unprepared in the basic fundamentals of grade school arithmetic.

The author is convinced that faulty reading habits are responsible in part for this poor showing, for the most frequent wrong answer for Problem 1 is 75 per cent. Also in Number 3, the salary for the year is the most common wrong answer, which is given instead of the salary per month as asked for. Only two problems in the test should offer any difficulty, i.e., Problems 5 and 8. Those whe are unable to work them, 63 per cent for Number 5 and 51 per cent for Number 8, seem to be completely lost. They are unable to figure out any logical point of attack. That, from the author's viewpoint, is the most serious factor in their inability to work these simple problems. Their power to reason intelligently is poorly developed. And there is, I think, more than a grain of truth in the statement that pharmaceutical arithmetic is one of the few courses in the pharmaceutical curriculum which attempts to correct this deficiency.

Nothing can be done for many of these students until some sort of a foundation has been laid. To attempt to carry them through any advanced course in pharmacy without it seems utterly ridiculous to the author. A course in metrology may have seemed elementary twenty-five years ago but there is nothing elementary about it at present—any more than there is about a beginning course in physics or organic chemistry. Pharmaceutical arithmetic is elementary only in that it is the beginning of a long, hard pull for most students and for all instructors.

Summary and Conclusions

Ten simple grade school problems have been given as an introductory test to three hundred school of pharmacy fresh-

men over a period of thirteen years. The results indicate that these students are poorly prepared in the basic fundamentals of grade school arithmetic. The author is of the opinion that this deficiency must be corrected early in the course in pharmacy if the student is to cope intelligently with the problems to be met in the more advanced courses. The student must have a rather highly developed mathematical reasoning power as a foundation for future building.

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Pharmacies In Denmark*

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Trading as a pharmacist or druggist is subject to a privilege system in Denmark.

Originally all pharmacy privileges could be transferred by the proprietor to another person if the latter had the necessary capital. In 1842, however, a Royal Ordinance introduced the system of personally privileged pharmacies in the sense as understood today. But it applied only to pharmacies opened after that date, so that those which could be sold were still capable of being transferred for a consideration. The Pharmacy Act of 1932 finally ordered their commutation, and when this has been brought to an end, all pharmacy privileges will be based on personal licenses. By this is meant a license issued solely to the individual and not transferable by the proprietor to another. When a license lapses the vacancy will be advertized and may be applied for by anyone having the necessary professional qualifications.

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In order to obtain a license for running a pharmacy the applicant must have graduated in pharmacy, must be a Danish subject, have full disposal over his estate and the management of his own affairs.

No license to trade as a pharmacist is issued to pharmaceutical graduates who have reached a certain age limit. Until 1942 this age limit is 55 years, whereafter it will be reduced by a year every three years, until in 1955 an age limit of 50 years has been reached.

This regulation means that not all qualified pharmacists can hope to be promoted to licensed pharmacists, for which reason it will be necessary to make a selection among all applicants for a license on the basis of seniority and professional qualification. Naturally, judgment of professional qualifications will always be somewhat arbitrary; but in order to prevent any injustice being done, all applications for a vacant license are placed before a Promotion Council, consisting of two members, one chosen by the Pharmacist Society and the other by the organization of pharmacy assistants. The Promotion Council declares which it considers are the five best qualified applicants, in numerical order of merit, whereafter the National Health Service gives its opinion on the claims of all applicants. Both declarations are forwarded to the Ministry for Home Affairs, where the final decision is taken; the royal license is then issued.

In analogy with the age limit for acquiring the first pharmacist license, the Pharmacy Act determines how long a pharmacist may hold a personal license to run a pharmacy. This, however, applies only to licenses issued subsequent to the enactment of that law. Until 1942 the age limit is 75 years, whereafter it falls one year every three years until the age limit of 70 is reached in the year 1955.

Thus holders of licenses issued prior to the Act are not subject to the provision as to age limit; but any pharmacist with a personal license has the right to surrender it and retire on a pension at the age of 70.

When the present Pharmacy Act came into force about one third (about 100) of all the pharmacies in the country were salable. Their commutation is proceeding rapidly, so that only 25 to 30 remain. Presumably they will all have been converted by the end of 1938. (The last conversion actually took place at Copenhagen on March 20, 1940.—Ed.) The work of

commuting them is in the hands of a committee known as the "Commutation Fund". The rules governing its activities are laid down by the Ministry for Home Affairs.

The proprietor of a commuted, salable pharmacy may obtain permission to continue it on a personal license, and he has the right to pass it on after his retirement or death to his widow, one of his children or children-in-law, provided that the transferee is qualified to hold a license.

The amount of compensation due to the proprietor of a salable pharmacy for commutation depends upon various circumstances. Consideration is given to the profits on the business, and to whether the pharmacist wishes to continue to run it, etc. The sum is paid to him, but thereafter it is debited to the privilege itself and repaid by annual instalments of 2½ per cent. of the original compensation sum. The period of repayment is fixed in every case by the Ministry for Home Affairs and is usually about 37 years.

Pharmacists with a personal license pay an annual charge, calculated according to certain rules, on both the net profit of the business and its turnover, though no charge is payable on incomes of less than 6000 kr. and on turnover under 40,000 kr. These charges, which rise progressively, are paid into the Pharmacy Fund.

The Pharmacy Fund supervises everything concerned with the economy of the pharmacies of the country and administrates the incoming charges and fees. The Fund bears the cost of subsidizing and pensions to pharmacists and their widows. It makes grants towards the pensions of pharmaceutical assistants on certain conditions, and defrays the expenses involved in connection with the activities of the pharmaceutical inspectors and the Pharmacopœia Committee.

Whereas the scope of the Pharmacy Fund is restricted to the economic side of the pharmacy business, everything else is under the jurisdiction of the National Health Service.

The latter consists of a Medical Department and a Pharmacy Department and is the chief adviser on all matters requiring medical or pharmaceutical insight. It is the chief supervisor in everything concerned with the control of medicines, and by means of circulars, issues regulations for the equipment and working of pharmacies, etc.

The fundamental principles in the present system of pharmacies are still the same as those in an Ordinance given in

the year 1672, whereby the authorities endeavored to secure the population good and cheap medicine. The provisions of that law, which is called the first Danish Pharmacy Act, were on the whole so comprehensive that the present system to some degree rests upon it.

Scattered all over the country are pharmacies which as regards their internal arrangements, equipment and method of working must comply with the legal requirements. At every pharmacy there must be at least one graduated assistant, and the premises must be open to the public day and night. In exceptional cases the Ministry for Home Affairs can grant permission for a pharmacy to be carried on wholly or partly without assistance.

In order to meet the people's desire for easy and convenient access to medicinal goods, pharmacies may on application be granted permission to arrange for outside sales of such medicinal goods as are obtainable without a doctor's prescription. These "over the counter" branches are usually arranged in places where the distance to the pharmacy is long or laborious. They are now widely distributed, for they are also used as receiving offices for prescriptions. In that way the people often save a long walk to the pharmacy. One or several times a day the prescriptions are collected for dispensing at the pharmacy which supplies the branch.

In addition, physicians at places where there is no pharmacy can be given permission to supply their patients with medicine, bandages, etc., which they receive ready for use from a certain pharmacy. In special cases, on isolated islands for example, a physician may be given more extensive authority to prepare and distribute the medicaments intended for his patients.

In order to ensure that the public gets good and proper medicines there is a committee under the National Health Service, the Pharmacopœia Committee, whose work it is to keep the pharmacopœia abreast of developments as well as to cause and supervise the drawing up of the collections of formulæ which are closely connected with the pharmacopœia and mainly contain formulæ for modern, good and cheap medicines. The committee, whose members represent the highest medical and pharmaceutical science, also acts as adviser to the National Health Service on certain matters.

By means of the National Health Service there is a con-

trol of medicines made in the pharmacies and also of those made industrially. To look after this branch of the activities of the National Health Service it has three pharmaceutically trained inspectors, and also an analyst who directs the analysis of proprietary medicines. The latter are mainly produced at factories.

At the pharmacies the supervision is exercised by these three pharmaceutical inspectors. At least once in every year, every pharmacy is inspected for the purpose of ascertaining that the National Health Service regulations are complied with. The inspector makes a general examination of the stock-in-trade, both raw materials and preparations. In the case of preparations or medicaments which take too long to test on the spot, he takes samples for analysis at the laboratory placed at his disposal.

The control of proprietory medicines includes, in addition to contents and composition, their name, price and how they are offered for sale. In order to make this control as effective as possible the National Health Service is empowered to require any information necessary from the manufacturer. If justifiable objection can be raised against a medicine, its composition, its quality, its price or the like, the National Health Service can prohibit its importation, sale or distribution.

To prevent several manufacturers from distributing the same specialty under different names, and to prevent the work of the control laboratory from becoming insurmountable, there is a regulation that all preparations marketed as proprietary medicines must first be approved as such by the National Health Service. Decisions as to whether a preparation is to be given this approval are taken in conformity with the rules laid down for the purpose, after the Pharmacopœial Committee has had an opportunity of giving its opinion.

In this manner the authorities have a hand in ensuring that only good and therapeutically valuable preparations are sold to the public, and through the work of the control laboratory the National Health Service is able to sort out less valuable preparations or those whose price is not in reasonable proportion to the value of their contents, and thus help in protecting the public from bad or exorbitantly priced medicine.

Judging whether a specialty is too expensive in proportion to its component substances takes place on the basis of

the prices in the official list of medicines. This list is issued by the National Health Service and the prices on it are fixed on the basis of the average wholesale prices. A revised list is sent out every year, but supplementary prices are circulated in the event of heavy fluctuations on any one article in the course of the year.

To ensure that the public is not decoyed by misleading advertisements to buy medicines they do not need, the National Health Service sees that the regulations laid down for advertising are not infringed.

Whereas the pharmacies formerly were the only places where medicines were made, a number of medicine factories have grown up during the past twenty or thirty years. The medicines they produce, supplied in their own packings through the pharmacies, have supplanted the pharmacy-made medicines to such an extent that one-third of all prescriptions call for proprietary medicines.

In Denmark the medicinal industry occupies a very high place, and the factories long ago established their right to exist by the marketing of several new and therapeutically valuable medicaments. Several of the preparations they make could not, at any rate at the present time, be made at a pharmacy. This applies especially to the organo-therapeutical preparations, the physiological effect of which can be determined only by biological means. Their standardization requires a specially and highly trained staff such as pharmacies usually have not at their command.

Loevens kemiske Fabrik has made a very considerable contribution to medicine by means of its intensive work on the production and isolation of various sexual hormones, by physiologically determining their effect and by marketing them in a form that will keep. In other spheres, too, this factory has been a pioneer; to a great extent it was due to its work that insulin could be sent out in Denmark as early as in 1923. This remedy is now produced by the self-supporting institution known as the Nordisk Insulin Laboratorium and is sold under the name of "Insulin Leo".

Another leading medicinal factory is *A/S Ferrosan*, whose specialty is the manufacturing and standardization of concentrated vitamin preparations, in which it has obtained very successful results. This factory also produces many other important medicaments; its liver and gastric preparations, which

are of high quality, are widely known. It has a separate department in the form of the "*Dansk Chemo-Therapeutisk Selskab*", where the important preparation Sanocrysin is made; it has gained a firm position in the treatment of tuberculosis.

Finally there is *A/S Medicinalco*. This establishment, whose main line is the manufacturing of medicaments containing vitamins and hormones, has made its name known far beyond the borders of Denmark by the marketing of Ventriculin and Pylorin. Medicinalco was the first factory in the world to send out a preparation made exclusively from the pyloric portion of pig stomachs.

Besides supplying the home market, all these factories enjoy a considerable export trade, built up on the excellent and uniform quality of their preparations.

Insulin, liver and gastric preparations, which in Denmark are numbered among the so-called "vital" preparations, have to be sold by chemists without a profit, though they are allowed to add 10 per cent. to the wholesale price in order to cover overhead charges, etc.

Similar humane measures have been taken with respect to the medicaments sent out from the State Serum Institute.

The *State Serum Institute* manufactures sera and vaccines, and thus in addition to being a scientific institution may be called a kind of medicine factory. It produces sera against diphtheria, tetanus, scarlet fever, meningococcus infections, etc., as well as vaccines against diphtheria, tetanus, small-pox, paratyphoid fever, cholera and catarrhal infections. Of the vaccines, diphtheria vaccine is sent out in the form of purified antitoxin combined with aluminum hydroxide. This preparation is made according to a method devised at the institute. Energetic work is done at its laboratories on purification and concentration in order to improve the various preparations and find new and better manufacturing methods for them.

Most of the sera and vaccines, which are principally used at the hospitals and special vaccination centers, are usually supplied free of charge direct from the State Serum Institute. On the other hand the institute has depots of sera at the pharmacies in various parts of the country; for example, in parts where there are vipers the pharmacies have a stock of anti-viper serum.

As the foregoing has shown, the distribution of medicines,

etc., proceeds through the pharmacies, whereas they are made both there and at the medicinal factories. In Denmark there is good proportion between the number of pharmacies and the number of medicinal factories. By means of a well-organized pharmacy system and an effective medicine control the Danish public is ensured the easiest possible access to the best possible medicine at the lowest possible price.

A Research Chemist Looks at the Pharmacy Curriculum*

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Having been a teacher most of my life, I doubt very much whether I should make any attempt with a year's experience in the manufacturing field to discuss the needs of the industry and the present pharmacy curriculum. Since being requested to give a paper on this subject I have questioned some of my colleagues in the manufacturing industry and made some observations of my own, the results of which are the views expressed in this paper.

Let us first look at the type of pharmaceutical houses we have and the kind of graduates they will demand. There are several large establishments which maintain separately housed research departments which are far superior in scope and equipment to many pharmacy schools in the country. A research laboratory of this type will be divided into departments such as pharmacy, pharmacology, biology and chemistry, all manned by specialists in their particular field. These laboratories are not handicapped for finances. Therefore the director will hire men for a specific job and not attempt to try and locate an individual that will be equipped to handle more than one type of work. If the problem at hand is of purely pharmaceutical nature or the opening is in the department of pharmaceutical research then some student with a

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Master of Science or Doctor of Philosophy degree from a pharmacy school may get the job. If the problem is chemical in nature then the pharmacy student does not have a chance. I am of the opinion that the personnel of any of these research departments is influenced to a great extent by the training of the director. The director who has had his training in chemistry and is not a pharmacist at heart is quite likely to have a research department filled with chemists. Observation will disclose several such organizations. If the director has had his basic training in pharmacy he is more apt to try and locate chemists who have had their foundation work in pharmacy.

Secondly, we have a large number of pharmaceutical houses which have small research departments composed of three or four individuals. In these cases you do not find specialization but the personnel must be able to cope with any problem that may develop in the plant. Under these conditions the average chemistry student is far from adequately trained to fill the job. An example of such a case was recently brought to my attention. A chemist was hired by a small manufacturer and given for his first assignment a problem which was purely chemical. He obtained good results without any knowledge of pharmacy. Next he was given the preparation of an elixir and was told to produce a product which was pleasing in appearance, taste and odor. The poor fellow was at a loss, but after taking twice the time he should, produced a very mediocre product. If this individual had been a graduate of a college of pharmacy he would have understood what was expected of him at once and would have been able to start work without the loss of so much time. When a small manufacturer hires chemistry students he must expect to function as an institution of learning until this person has acquired some of the fundamentals of pharmacy. Why not hire a pharmaceutically trained chemist to start with and save several hundred dollars in lost time?

The student who is looking forward for a connection with a small pharmaceutical house should obtain a good foundation in both pharmacy and chemistry. Most pharmacy schools offer a general course intended for the individual who has something other in mind than the retail drug business. This individual should then after receiving his Bachelor of Science

degree take his advanced degrees in chemistry and related fields. Considering the present trends in the industry such minors as biological chemistry and pharmacology would be quite fitting. An individual with this general training would be of more value to the small manufacturer than the specialist in one field who is of little value in routine plant production until he has been trained by that institution. Unless the individual is a very apt scholar the manufacturer may find his schooling too costly and try someone else.

For our third point, let us consider the control departments where we need specialization. Here again, the individual with a pharmacy background has the advantage over the chemistry student. The student who has had courses in pharmaceutical assay soon learns the routine of the control laboratory. We have tried both types in our laboratory and are convinced that an analyst from a pharmacy school is far superior. The chemistry student is at a disadvantage by not understanding official assays or anything about the preparations they are assaying. The new food and drug laws have had a big influence on the control work in many small plants. Such laboratories did not exist in some plants a few years ago and it is likely that they will be expanded in many instances in the near future. The rigid control which is now demanded will create more openings as soon as the Food and Drug Administration starts enforcement of the new law. There is a greater possibility for a student with a Bachelor of Science degree entering this line of work than the research branch. However, some manufacturers are demanding the Master of Science degree for the members of their control staff. Here again, if the student is considering an advanced degree a major in analytical chemistry would be to his advantage.

As for the course of study offered in the average pharmacy school, I believe it meets the needs of the present day student. However, we must keep in mind that the primary purpose of our existence is the training of well educated men and women who will be a credit to the profession. When you stop to think 75 per cent or more of your students will go into the retail drug business, it may be that we are placing too high a value on pharmaceutical chemistry. There may be other courses which would be of more value. I have heard teachers argue that chemistry courses above the fundamentals

are essential to the retail druggist so he can converse intelligently with his physicians on the latest developments in medicine. Personally, I doubt this as the average physician has forgotten most of his chemistry before he is through his internship. Courses in pharmacology would probably furnish a better ground for *talking shop* with the physician.

In closing, may I say regarding the undergraduate course in pharmacy, give the student the necessary fundamentals for the line of work he intends to take up after graduation and leave specialization for graduate study. Take care that the curriculum does not lose all its flexibility by considering too many courses as fundamental.

The Standardization of Vegetable Drugs

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This paper is presented with the hope that the thoughts expressed will be of value in improving methods for the standardization of vegetable drugs in the U.S.P. and N.F. revision work.

There are, in U.S.P. XI and N.F. VI, a number of crude drugs of botanical origin for which there is no standard, other than pharmacognostic, to measure quality or purity. For example, the flavoring and carminative values of fennel are contained in the volatile oil. Aging results in the loss of oil, and the fruit is then unfit for use. Such inferior fennel was purchased by the writer from a neighborhood drug store, and upon opening the package the characteristic odor could not be detected nor was it perceptible even after bruising the fruit. If such a drug were used in making an infusion for the relief of flatulence, the results would be about as satisfactory as would be obtained by using so much hay. It is possible that this particular merchandise was inferior when the pharmacist purchased it and even when the wholesaler purchased it.

Althaea, which is rich in mucilage, and red saunders, which is valued for its coloring matter, are of little or no medicinal value, and therefore require no special evaluation, particularly since the most valued ingredient of each drug is

non-volatile. However, even red saunders should have a standard, possibly controlling the color extracted from a given weight of drug by a fixed volume of the proper solvent, under stated conditions. This would greatly facilitate color matching.

For cardamon seed and caraway, drugs valued for their essential oil, we not only lack standards, but also find differences in the reported volatile oil content. The oils of these drugs are official in the National Formulary. It would seem that after distilling various lots of these drugs a more uniform range of volatile oil content might be found, and the same be officially required.

Cannabis, a drug which has gained notoriety in recent years, is said to differ considerably in resin content, depending upon the mode of cultivation. Cannabis may deteriorate on standing. Why not establish a standard of ether-soluble extractive so that we may be assured of full potency at the time of purchase?

Cascara sagrada and senna, two active and much used drugs rich in anthraquinones are likewise without a standard other than the pharmacognostic purity rubric. A number of investigators have determined the total amount of these principles present in each of these drugs. Why not confirm their findings and officially adopt them?

The amount of bitter resin reported for eriodictyon varies from 8 to 30 per cent. Here, also, is need for official guidance. Nutgall is reported to contain up to 70 per cent of gallotannic acid, however there is no Pharmacopœial requirement. The need for an accurate and permissible range is obvious.

The quantity of the cyanogenetic glucoside yielded by wild cherry depends upon the characteristics of certain cells in the outer bark. With the deterioration of the drug, the glucoside hydrolyzes, and as much as 50 per cent of the hydrogen cyanide may be lost. We have no official requirement based on the hydrocyanic acid content.

Squill, which is similar to digitalis and strophanthus in physiological action, has no assay requirement. Other pharmacopœial drugs which are not standardized include glycyrrhiza, sarsaparilla, serpentaria, valerian, and others. It is possible that upon reviewing the literature excellent methods for evaluating these drugs may be found. In any case, it is

the belief of the writer that for the improvement of the Pharmacopœia and the National Formulary, for the guidance of importers, jobbers, and manufacturers, and for the protection of consumers, all official drugs should have standards of quality and potency other than those based on pharmacognostic features.

Criticisms of the Pharmacopoeia

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These criticisms are offered in the spirit of improving our Pharmacopœia, which, as it stands, is probably the best book of standards for medicinal preparations in the world. The criticisms are limited to the chemical features only, and are by no means complete. The monographs selected are exemplary of those which should be thoroughly studied by the various committees of the revision staff.

The criticisms offered may be divided into three groups. The first group is characterized by the failure to carefully scrutinize the monographs of one edition before including them in the revised copy. This may be referred to as the *sin of carry-overs.* It is not necessary that each monograph be rewritten, or that changes be made merely for the sake of the changes, but errors should be eliminated and inconsistencies corrected. Under acetophenetidin, Tests for purity, U.S.P. XI, is the statement, *"A mixture of about 0.005 Gm., of Acetophenetidin and 1 cc. of nitric acid develops a yellow color which becomes darker on standing."* This is the Autenrieth-Hinsberg[1] test for the detection of acetophenetidin, and as such it belongs under the tests for identity and not under tests for purity. This is a careless carry-over from the U.S.P. X to the U.S.P. XI and indicates failure to scrutinize the monograph before adoption. The error is not serious, but there is no justification for it.

Both the U.S.P. X and the U.S.P. XI contain a table which correlates *"Descriptive terms"* of solubilities with *"Relative quantity of solvent for 1 part of solute"*. This table is valuable for it lends more meaning to terms like freely soluble, very soluble, and practically insoluble. Yet, the Pharmacopœia fails to adhere to these terms. Thus, in the monograph on tri-

chloracetic acid, we find the acid described as being soluble in alcohol and ether. According to the table, this indicates a solubility of 1 part of the acid in from 10 to 30 parts of solvent. In reality, trichoracetic acid should be described as being very soluble in these solvents, since 1 part of acid dissolves in less than 1 part of alcohol or ether. Again, this is an example of a carry-over from the U.S.P. X to the U.S.P. XI. Incidentally, it was correctly described in the U.S.P. IX as being very soluble in alcohol and ether.

Trichloracetic acid offers another example of a careless carry-over. The purity rubric is given as not less than 99 per cent. The equivalent of 1 cc. of normal sodium hydroxide is given as 0.1634 Gm. Then comes the carry-over from the U.S.P. IX to the U.S.P. X, and even to the U.S.P. XI, *"Each Gm. of Trichloracetic Acid, previously dried to constant weight over sulfuric acid, consumes not less than 6.06 cc. and not more than 6.12 cc. of normal sodium hydroxide"*. This statement is superfluous, and it finds its way into the U.S.P. XI because this monograph was transferred in its entirety from one revision to another without the proper checking.

Another illustration of failure to check the monographs thoroughly is found under acetyltannic acid. It is described as being only slightly soluble in water. This indicates that 1 Gm. will dissolve in from 100 to 1000 cc. of water. Yet, in the same monograph under test for purity, there is a test for soluble substances, and it states that the residue remaining after the evaporation of 100 cc. of solution should not exceed 0.03 Gm. This solubility is less than one-third of the solubility previously stated in the monograph.

In the second group, the criticisms concern the adoption of changes which are improperly checked and in some cases unwarranted. For example, the method of assaying spirit of camphor had to be corrected in the supplement to the Pharmacopœia. The method recommended in the U.S.P. XI was so faulty that one might justifiably conclude it had not been authoritatively tested before being accepted.

As illustrative of an unwarranted change, attention is called to calcium bromide, which was assayed, according to the U.S.P. X, by the Volhard method. To replace this method, the U.S.P. XI adopted one wherein the calcium was precipitated by the addition of an excess of standard oxalic acid solution, and the excess of oxalic acid was back-titrated with

potassium permanganate solution. Apparently, this method was not completely satisfactory, and therefore, in the first supplement to the U.S.P. XI, it was changed so that the precipitated calcium oxalate is isolated and treated with sulfuric acid, and the liberated oxalic acid is titrated with potassium permanganate solution. The changes from the U.S.P. X method did not seem necessary, and a recent study by Walb and James[2] indicates that the most recent method adopted by the Pharmacopœia does not give as consistent results as does the Volhard method.

The assay of camphor liniment is another example of an unwarranted change. The U.S.P. X recommended that the sample be heated in an oven at 110°C. for about ninety minutes in order to volatilize the camphor, and thereby determine the camphor content. The method was sufficiently accurate and entailed no difficulties. In order to avoid oxidation of the oil, the U.S.P. XI requires that the assay be conducted in an Erlenmeyer flask, under a stream of carbon dioxide, while heating in an oven at 110°C. for 2 hours. In lieu of the simple and rapid method, we have to accept the more complicated and slower method. Bergman[3] has shown that the former method is very satisfactory; it can be improved by heating for only 75 minutes in a shallow dish on a boiling water bath, provided efficient ventilation is maintained for volatilizing the camphor.

Although chloroform liniment has been officially recognized in our Pharmacopœia since 1860, it was not until 1936 that an official method of assaying was offered. A simple method of assaying it was offered by Mayer[4] in 1912, and this rapid procedure was followed with success in numerous laboratories. Yet, the U.S.P. XI adopted such a cumbersome and time consuming method, that in the supplement it was necessary to lower the purity range from 40 Gms. to 35 Gms. per 100 cc. of chloroform liniment. The lowering of the requirement was not suggested by difficulty entailed in preparing the liniment, but was due to low results obtained by the complicated method of assay adopted by the Pharmacopœia, even though a simple one was available.

The third type of criticism is similar to the first in that it refers to a reluctance to adopt changes. In the first instance it was pointed out that monographs are handed over from one revision to another without being properly checked and corrected. Reluctance to adopt changes is illustrated by the

fact that the Pharmacopœia continues to use the bio-assay method for Ergot and its preparations, in spite of many objections, rather than to adopt the colorimetric method which is more accurate. Seemingly, the proof of the efficiency of the colorimetric method is that it was adopted by the British Pharmacopœia and by the Association of Official Agricultural Chemists.

Another objectionable assay method is the separate determinations for iodine and potassium iodide in tincture of iodine, mild tincture of iodine, and in compound solution of iodine. For this class of preparation, the literature offers rapid, accurate methods. One may ask also why the Pharmacopœia fails to include assays for acetanilid, acetophenetidin, amidopyrine, and antipyrine, and why it fails to include a test for the detection of teaseed oil in olive oil.

This paper has not begun to scratch the surface of possible criticisms of the Pharmacopœia. It is offered in the hope that it will create discussion and stimulate the Revision Committee to correct and constructively change the monographs in error.

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Should the Teacher of Manufacturing Pharmacy Have Had Actual Experience in the Commercial Manufacture of Pharmaceuticals?*

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It cannot be denied that a teacher who has acquired skill in a commercial manufacturing plant would be better equipped to teach a course in manufacturing pharmacy than one lacking such experience. Certainly it is not necessary and perhaps it would be unwise at this time to make any specific recommendations either for or against teachers actually obtaining

*Read before the Conference of Teachers of Pharmacy at the 1940 meeting at Richmond.

experience in the commercial manufacture of pharmaceuticals. To say experience is undesirable or inadvisable would certainly be unintelligent and could be viewed as a statement which was made to justify a lack of something that without a doubt would be useful. However, it is my opinion, that one is justified at the present time in saying that actual experience in the commercial manufacture of pharmaceuticals is not a necessity in order to successfully supervise an adequate course in commercial manufacturing pharmacy.

If one were to place as much emphasis on the preparation of students for positions with manufacturers as is now placed upon the preparation of students to become intelligent dispensers for the public's welfare, or if we are to consider commercial manufacturing of as great importance to the practice of pharmacy as radiology, surgery, internal medicine, and obstetrics are to the successful practice of medicine, we can best answer the question under discussion by asking and answering the following questions: Can one give a good course in dispensing pharmacy if he has never filled a prescription or coped with the problems which arise from varied experiences in compounding? Can a teacher of radiology give a good course if he has never had experience in taking X-ray pictures or giving X-ray or radium therapy? Can one teach surgery effectively if he has never performed a great variety of operations? Can one teach internal medicine or obstetrics effectively if he has never diagnosed a condition or treated a patient or handled a variety of maternity cases? It is evident that if a more detailed course in commercial manufacturing than is now given is justified we who teach should be required to obtain practical experience in order to bridge the gap between that which is taught and that which is required of a graduate after entering the field.

It is not my opinion that more emphasis should be placed on this phase of pharmacy if this will entail a sacrifice of some of the developments which have come forth in recent years to improve the ability of the pharmacist to render a better service to the public. No matter what field of pharmacy a student chooses we must allow an adequate amount of time for instruction in order to prepare him to carry on that phase of pharmacy which is the backbone of the profession, namely, public health work.

There is an increasing and justifiable demand for gradu-

ates in all branches of pharmacy to be better trained in pharmacology, biochemistry and bacteriology. More time could profitably be spent on these courses. We have during the last decade improved the course work in the fundamental sciences to a degree that the graduate is prepared for any additional training which the manufacturer himself wishes to give.

Commercial manufacturing companies employ pharmacy graduates to serve in a variety of positions, many of which require very little information about commercial manufacturing pharmacy. These positions range from that of a clerical nature to that of a supervisor of production. While observing the variety of positions which our graduates fill, it occurred to me that very few of them actually do technical manufacturing. There is disagreement among manufacturers as to whether or not graduates who come into their employ are sufficiently well trained in the basic fundamental principles of manufacturing, but a great improvement in the caliber of the graduates from pharmacy schools has been observed. Furthermore, it is the unanimous opinion of these men that chemists with a pharmaceutical background represent the most desirable employees.

In order to obtain the attitude of the manufacturer on this subject, I have sent a questionnaire to a number of the leading drug manufacturing concerns. The replies to the questions asked give many interesting points of view.

There is disagreement among the men questioned whether or not a more detailed course in commercial manufacturing would materially benefit the employee or employer. It was the common opinion, however, that the customary training period offered by commercial manufacturers would not be materially shortened if a more detailed course were offered by the colleges. These men quite frankly expressed the opinion that they prefer seeing more emphasis placed on the fundamental sciences since it is in colleges only that such information can be gained.

They are quoted verabtim.

QUESTION I.

1. How much time, in your opinion, would be required to obtain adequate experience if such is needed and how often should additional time be spent in acquiring additional experience?

ANSWERS:

a. Processes and methods of manufacture are undergoing continuous change and unless a man is in touch with this change con-

stantly, it would be only a very short time before his manufacturing experience would be obsolete.

b. It is my understanding that several teachers of manufacturing pharmacy spend three months of each year in commercial laboratories to keep abreast of the trends. Such contact should be renewed each year as today's processes are frequently obsolete tomorrow.

c. I do not know how it would be possible or practical for teachers in pharmaceutical schools to spend a brief period in a manufacturing laboratory, such as ours, acquiring personal and practical experience in manufacturing work.

d. Two years of varied manufacturing experience should equip a "go-getter" type of instructor to be a valuable addition to a teaching staff. Perhaps this could be enhanced with summer employment to keep abreast of advancement.

e. We cannot answer this question. We should think it would be better for a graduate in pharmacy to take about two years of practical experience with some manufacturing company and then go into teaching, although he would be well advised to keep the manufacturer in the dark concerning his plans. Such a man could keep himself up to date by means of occasional visits to manufacturing plants, and by contacts with such events as the chemical expositions and package shows.

f. It would require at least five years to receive adequate experience in manufacturing plants to fully understand various processes and problems. This assumes, of course, that we are speaking of a general pharmaceutical business and not just one or two specialized lines of preparations. It would probably be necessary for such a person to renew his experience in manufacturing, at least six months in every five years, if he wishes to keep abreast of manufacturing methods.

QUESTION II.

2. Would your company, in your opinion, make available to teachers of pharmacy the opportunity of receiving manufacturing experience?

ANSWERS:

a. We are always glad to spend some time with members of the faculty of various colleges of pharmacy, but the question of receiving long manufacturing experience would have to be decided by the management.

b. This would depend on the conditions and circumstances surrounding each individual request. Several years of initial training would be necessary.

c. We have no present arrangement whereby teachers of pharmacy could receive manufacturing experience in our organization, and it is not certain just how one could be made.

d. Perhaps, however, pharmaceutical manufacturing involves training men in methods and use of apparatus. Spending time, money and effort to train men to be teachers might not be economical

for a manufacturer, considering the number of men who are hired each year.

e. The answer to this question would depend entirely upon the company policy. It is doubtful if many companies would care to make available to the teachers of pharmacy the opportunity of receiving manufacturing experience for two reasons:

1. It entails considerable expense for any company to train a man for manufacturing. It is doubtful if they would care to make such a large investment of time and money and then release the man to a university upon the completion of his training.
2. Most companies would hesitate about revealing secret processes and other company secrets to anyone whom they did not expect to remain with the company, particularly to a teacher, who would necessarily pass this information on to a large number of people.

QUESTION III.

3. In your opinion, how many of your employees engaged in commercial manufacturing who have sufficient training and who possess the qualities of a good teacher would be willing to accept a position in a school of pharmacy where the average salary range is from $1,800.00 to $3,600.00? This question was asked in order to ascertain roughly if schools of pharmacy might employ employees of commercial manufacturers.

ANSWERS:

a. This is a particularly hard question to answer because some men are qualified to make good teachers and others are better fitted for laboratory work.

b. To be perfectly frank, I doubt if any of the graduates engaged in commercial manufacturing would be willing to accept a position in a school of pharmacy at the prices stated. Our starting wage is about $1,800.00 with prospects of the individual going beyond the $3,600.00 rate after he has become thoroughly seasoned. This, of course, depends upon the individual, his capacity to accept responsibility and the number of opportunities for advancement which present themselves during a stated period of time.

c. I have no idea whether there would be men now in our laboratories who would be interested in teaching positions such as you describe, men who have had previously, both the necessary scientific background training and several years of practical experience. About the only way to find out would be if some specific case came up in which a school would have need of this type.

d. Perhaps such men would accept such an opportunity if there were chances for special lucrative investigations and outside consulting jobs to augment their earnings.

e. We think that the salary range which you mention ought to be

attractive to a number of the younger graduates in our employ. For many men, however, there seems to be something about the manufacturing business that is exciting and challenging, and that makes it a bit difficult to pull them away.

f. If knowledge of teaching is correct, the qualifications of a good teacher must include a Ph.D. degree. This greatly limits the employees who are available for teaching in a school of pharmacy. However, it is believed that the employees who are engaged in strictly manufacturing work would probably welcome an opportunity to teach at the upper limit of your salary range; namely, $3,600.00.

A study of these replies leads one to the conclusion that manufacturers themselves feel the best preparation for manufacturing pharmacy is a more thorough training in the basic sciences. This will permit the recent graduates to effectively and rapidly comprehend the training offered by the individual manufacturers which of necessity will have to continue even if more time is devoted to such course work in our schools of pharmacy.

Are Graduates of Colleges of Pharmacy Giving Courses in Manufacturing Equipped to Handle Manufacturing Problems?*

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This question can be very quickly answered with the word of one syllable,—*No.* Perhaps this answer may be misunderstood by many of our associates in the colleges who are so proud of their manufacturing laboratories where they are attempting to teach manufacturing pharmacy. However, anyone who has had any experience in manufacturing pharmacy will remember how many times we have worked out processes in test tubes thinking we have all the details under control, only to find that when it is transferred to a larger manufacturing scale that the work has to be done all over again.

In our college laboratories we may successfully work out

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a formula for production of a few thousand tablets, or a few pounds of some standard pharmaceutical product, but usually these lots are so small that we fail to recognize many of the details which may be important factors when larger production is attempted. A few years ago in the manufacture of compressed tablets a few general formulas were used for all the drugs used in tablet medication. Many of the finished tablets were very slowly soluble and did not present what we today would call a finished appearance. In fact, we were lucky if the tablets could be removed from the tablet machine and were sufficiently hard to withstand handling. Today, every different chemical used in tablet manufacture is a separate problem. Characteristics of excipients, methods of granulation, drying, and lubrication, are worked out for each drug. The problems and details are so many that a young man would have to stay in college a long time to acquire the necessary information.

I must admit the graduates today from our colleges of pharmacy have much better training than a few years ago, and are able to make a place for themselves more quickly than their predecessors. I refer particularly to those who engage in manufacturing pharmacy, such as the development of formulas and the supervision of manufacturing, and not to those who enter the field of assay or control work. Many of our colleges are doing an excellent job of instruction in drug assaying. I do not believe, in the short time allotted, that it is possible to teach the details necessary to equip the student so that after commencement he can step into manufacturing laboratories and be qualified to develop or improve working formulas or supervise manufacturing operations without a long period of experience.

I sometimes wonder if the curricula in our colleges of pharmacy should not be revised to meet the changing conditions in pharmacy. Here again I may have a quarrel with some of our associates. Ten or fifteen years ago, we used in this country approximately six hundred vegetable drugs. Today we use less than two hundred and fifty, and a relatively small number of these are very important. In spite of this change we find that many of our colleges of pharmacy are giving as much time to pharmacognosy as they did twenty or more years ago. Whereas this same time could

be more profitably employed for basic training in some branches of chemistry.

Research is one of the most rapidly developing phases of pharmaceutical manufacturing and our colleges can materially assist the student in preparing for this field by increasing time given to the various branches of chemistry, particularly organic and physical chemistry. A knowledge of fundamentals of physical chemistry is most important if graduates are to solve the problems encountered in the manufacturing laboratory. A student better grounded in these basic sciences will more quickly become an important factor in the manufacturing laboratory.

I wish to emphasize the fact that our colleges have a great responsibility in selecting students for graduate work. I have interviewed a number of men who hold advanced degrees and wonder just how and on what basis the faculty accepted them for graduate work. They may have been brilliant undergraduate students, but they did not have any of the other characteristics so essential for successful research work. The student selected for graduate work should have, in addition to the proper scholastic foundation, imagination; he must be cooperative, and able to work not only with those who are his equal, but also with the various types of labor. He must be able to stand criticism, and possibly ridicule. He must be able to think clearly and must be systematic, he must be persistent and not easily give up when everything seems against him, and there are many other qualifications which I could mention.

At many of these meetings I have heard the question asked in a critical manner as to why the manufacturers of pharmaceutical products employ graduates other than those trained in our colleges of pharmacy. I think this is easily understood when you recognize that the science of pharmacy embraces and draws from practically all the other sciences such as chemistry (and all its branches), botany, physics, biology, pharmacology, medicine, and in addition engineering. A well-balanced laboratory must have men specifically trained in these various subjects. You certainly could not expect students with the bachelor's degree in pharmacy to do research work in chemistry or biology. It is too much to expect. The manufacturer has to employ many men not specially trained in pharmacy.

In conclusion I am not brave enough to offer any definite recommendations. It must be recognized that most of the students will engage in the retail business, and our curricula must be built with these needs in mind. The student with qualifications which indicate that he would fit into a manufacturing or research laboratory should be encouraged to take as much additional chemistry as he can carry with his regular work. He should be given special training in the use of the library. He should be taught to think out each problem to the end, and not be too quick to jump at conclusions. Then he should later be encouraged to do graduate work before attempting to enter the field of research or manufacturing.

What Should Be Included In A Laboratory Course In Pharmacology, Toxicology, and Physiology*

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The title of this paper implies that one laboratory course may be given to include these three broad subjects. I believe everyone will agree that each subject is important enough to require a full course, however, since the pharmacy curriculum is already quite full, undue repetition should be avoided whereever possible. A large part of the subject matter of each of these sciences is the same. Actually pharmacology could be considered a branch of physiology and toxicology a branch of pharmacology. Physiology is a study of the functions of a normal animal, pharmacology is a study of the functions of an animal as modified by a drug, while toxicology is a study of the functions of an animal as modified by a toxic amount of a drug. It is important to have the student see the correlation between normal function and that modified by drugs in order to appreciate the effects of the drugs, which is possible when the laboratory work in physiology and pharmacology is combined in one course.

Concerning the proper place in the curriculum for the course, it should be given concurrently with the lecture course

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in pharmacology and toxicology after an adequate theoretical course in physiology. It would be too difficult to attempt to have the laboratory course run along with lecture courses in both physiology and pharmacology. As a prerequisite, if the pharmacy curriculum would permit it, a course in zoology which would include considerable laboratory work in comparative anatomy would be desirable. The student should be familiar with the structure of a few vertebrate forms such as the frog, turtle, and rat. A knowledge of physics sufficient to understand the electrical apparatus used for artificial stimulation would be helpful. A knowledge of drug producing plants would also be desirable.

In order to decide what should be included in the laboratory course under discussion, the purpose of the course must first be considered. What should the student carry away with him when the course is completed? In the first place, I think the student should have an opportunity to see at first hand that drugs do have definite effects on an animal and that many of these actions may be used advantageously in therapeutics. The advanced pharmacy student has been drilled for two or three years in the preparation of drugs, the importance of purity in preparing pharmaceuticals, the significance of incompatibilities, the organic synthesis of specifics, but not once has he seen a drug in action. He has developed a one sided picture of pharmacy. Pharmacy makes this mistake frequently. The student becomes very much involved with such things as adulteration, method of assaying, botanical source, and physical characteristics. He should come to realize that some of the drugs he has studied have been found to be of little or no value as therapeutic agents when subjected to laboratory experimentation and clinical examination. The laboratory, therefore, becomes the place where the prospective pharmacist can see for himself the effects which drugs produce. Where possible, he should have an opportunity to observe the effects of the therapeutically important drugs on experimental animals. In many cases these effects do not differ greatly from those on the human body.

A second aim or purpose should be to help give the pharmacist a proper foundation to intelligently converse with the physician. The chief interest of the physician is in therapy. Naturally his conversation with the pharmacist will focus on the effects and uses of drugs. The pharmacist should feel that

he is on common ground with the physician at this point. It is too much to expect physicians and pharmacists to cooperate if the two groups are not able to speak the same language.

A third aim should be to familiarize the future pharmacist with the contraindications for the use of drugs. This knowledge will be helpful to him in the proper labeling of medicaments in keeping with the provisions of the various federal, state, and municipal food and drug laws.

In the laboratory students should have an opportunity to become familiar with the symptoms produced by toxic doses of potent drugs. He learns that the margin between a physiological and a toxic dose is very narrow in some cases. He can also be shown how to counteract many toxic symptoms. The laboratory is an excellent place to learn the relation between the weight of the animal and the size of the dose. Also, variations are seen which call attention to such biological factors as synergism, tolerance, and cumulative action. The student will learn to appreciate the fact that different species or different groups of animals may react differently to the same dose and that the same animal may react differently at different times. This is a different viewpoint from the one he has learned in chemistry where certain chemicals always react the same way when the circumstances are identical.

Now let us consider the mechanics of the course. In physiology many experiments can be carried out upon the student himself. This is practical in experiments dealing with the physiology of sense organs, metabolism, respiration, and blood pressure. The frog is a good experimental animal because of the wide range of experiments which can be carried out upon it. It is also inexpensive. The turtle is a good animal for certain experiments. Among warm blooded animals the rat, cat, and the dog serve the widest range of usefulness, depending upon the character of the experiment and the nature of the drug.

It is common knowledge that independent laboratory work is much more instructive to the student than demonstration work by the instructor, but it must also be remembered that a demonstration with the aid of as many students as possible is better than omitting an experiment which might be considered if the experiment is too difficult, too lengthy, or too costly for each member of the class to perform. Another use for the demonstration method is to overcome the embarrass-

ment of limited equipment. Perhaps a better way to obviate this condition is to provide some system of rotation of experiments so that several requiring different equipment may be carried on at the same time. Experiments to include physiology, pharmacology, and toxicology in proper proportions can be arranged. First, the physiology of the organ or system should be taken up, then the effects of the important drugs should be studied, and finally the toxicological symptoms, if they are important enough for recognition. Standard laboratory text books in physiology, pharmacology, and toxicology provide abundant material for any laboratory course. If desired, part of the work in toxicology may include chemical methods for detecting the presence of poisonous drugs.

It has been my desire in this paper to suggest reasons for including various material in a laboratory course in physiology, pharmacology, and toxicology. Only generalizations have been considered because a detailed discussion would be too voluminous and unnecessary. The course can never be taught exactly the same in two schools because of the different personalities of the instructors. Each instructor has had a slightly different background and will present the subject in the light of his own experience and his own special interests.

Increasing Importance of the Microscope in Pharmaceutical Analysis

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The existing and in some cases rather unsatisfactory tests in the U.S.P. for the identification of alkaloids called forth an investigation into the application of microscopic tests in that field and some of the results of that investigation are presented in this paper.

Some of the color tests now official, are quite satisfactory but others are rather indefinite, as the color found may be transitory or easily affected by interfering substances, especially traces of other organic material. Few of the colors formed are permanent and many are sensitive to heat or to changes in the pH or concentrations of the solutions.

The common precipitants such as Mayer's Reagent (po-

tassium mercuric iodide) and Wagner's Reagent (iodine in potassium iodide) give general information as to the presence of an alkaloid but can not often be used to identify the specific alkaloid, although in some U.S.P. tests the macroscopic nature of the precipitate is used as a distinguishing feature. For example, gold chloride test solution is used to distinguish between atropine and hyoscyamine; with the former it produces a *lusterless* precipitate, with the latter a *lustrous* one. In some cases the appearance or absence of a precipitate upon the addition of the reagent is used to distinguish between alkaloids of a somewhat similar nature. For example, mercuric chloride test solution produces no permanent precipitate with cocaine hydrochloride, whereas one *is* produced with cocaine or alphacocaine.

In a few cases the difference is "from many other alkaloids," e.g., silver nitrate T.S. added to a solution of quinidine sulfate gives a white precipitate on standing; platinic chloride T.S. produces *no* precipitate in a cold concentrated solution of pelbetierine tarnate, the test being used to distinguish it from "many foreign alkaloids."

The Pharmacopœia also notes as identification tests the formation of a precipitate in certain cases with some of the general alkaloidal reagents, e.g., procaine hydrochloride fields precipitates with gold chloride T.S., iodine T.S., mercuric potassium iodide T.S., or picric acid T.S. An official test in the National Formulary for papaverine hydrochloride is the formation of a precipitate with mercury bichloride T.S., iodine T.S., potassium ferricyanide T.S., and picric acid T.S.

The advantages of the microscopic method of testing may be briefly summarized as follows:

(1) The time required to make and examine a slide is generally much less than that required to prepare solutions and perform a chemical test.

(2) With the exception of the miscroscope, a minimum amount of apparatus is needed.

(3) A much smaller amount of the material to be tested is used giving more chance for verification of results by increasing the number of tests possible.

(4) Most of the structures formed are fairly stable. They can be photographed and a permanent record obtained.

These last two points (3) and (4) are of particular value in toxicological work, as the amount of material available is generally quite small and a permanent record may be advantageous in case of presentation of evidence. For these rea-

sons there is also chance for the development of this type of test in the field of the new synthetic organic pharmaceuticals which are constantly being produced and placed on the market.

A specialized branch of the work is in the use of the polarizing microscope as referred to on page 454 of the U.S.P. Many of the official alkaloids are optically active; ephedrine, codeine, colchicine, quinine sulfate, scopolamine hydrobromide, strychnine nitrate and strychnine sulfate are all levorotatory; quinine sulfate is dextrorotatory; in the N.F., cinchonidine sulfate is levorotatory and cinchonine sulfate is dextrorotatory. The exhibition of refraction and the formation of colors in the crystals are additional factors which aid the analyst in identifying the crystal formations.

The field of chemical microscopy has been extensively studied; the names of Emich, Donau, Pregl, Deniges and many others are well known. The text "Handbook of Chemical Microscopy," by Chamot and Mason of Cornell University is extensively used and Lindsley in his text, "Industrial Microscopy," presents a comprehensive scheme of inorganic qualitative analysis based upon characteristic crystal formation. The latter part of the nineteenth century saw the beginning of the development of microscopic tests in the identification of alkaloids. In 1869 the text, "Microchemistry of Poisons," by T. G. Wormley, included microtests for nine alkaloids. About the same time picric acid was found to give crystalline precipitates when used as an alkaloidal reagent, and the precipitate formed with potassium permanganate and cocaine was described as a specific identification test for that alkaloid. The book "Some Microchemical Tests for Alkaloids," by Charles E. Stephenson and C. H. Parker, was published in this country in 1921, and is one of the chief standard references used in this field. Many of the newer tests have been studied and developed by L. Rosenthaler in Germany and published in his 1935 "Toxicologische Mikroanalyse." One of the most prominent recent investigators in this country is G. J. Glycart, under whose direction tests have been carried on by the research department of the Association of Official Agricultural Chemists and new microscopic identification tests appear from time to time in the journal of that organization.

The types of chemicals which in solution give specific crystal formations with the alkaloids are taken from a rela-

tively small field. The majority are from the group of comparatively rare metals; solutions of simple or compound salts, especially the halides of gold, platinum, cobalt, cadmium, antimony, phosphotungstic and phosphomolybdic acids, are used as precipitants. Some formations appear to be due to an oxidizing reaction by the addition of such solutions as iodine in potassium iodide, bromine in potassium bromide, potassium dichromate, potassium permanganate, potassium ferricyanide; in a few cases crystals are formed upon the addition of a reducing salt such as potassium oxalate, or potassium thiocyanate. The use of an organic dye, sodium alizarine sulfonate, has recently been investigated.

It would seem from a study of these tests and the work carried on in our laboratories that this type of work might have a more extensive application in pharmaceutical analysis than is in use at the present time.

Notice

A new committee has been constituted called the Committee on Personnel Problems. Its purpose is to consider such matters as may be of common interest to the several national associations concerned. The Organizations and their representatives are as follows:

American Association of Colleges of Pharmacy:
George C. Schicks, Thomas D. Rowe,
Henry M. Burlage.

National Association of Retail Druggists:
Edward Spease, George A. Bender, John W. Dargavel.

National Association of Boards of Pharmacy:
J. K. Atwood, Roy Bird Cook, Edgar O'Harrow.

American Pharmaceutical Association:
Joseph B. Burt, Carl J. Klemme, Robert C. Wilson.

Dr. Burt is chairman of the committee.

Editorials

The Employer's Obligation as a Teacher

One of the most valuable and most interesting observations perceived during the writer's teaching career has occurred since joining the faculty of the College of Pharmacy here at Ohio State University. It resulted from the fact that a large number of the students enrolled in the college are also working part time in the local drug stores, and frequently take occasion to comment on the events which take place while they are on the job. *"Did it ever occur to you men who hire these boys, that you are potentially the most driving influence they have to really learn and develop?"* It is a fact, and undoubtedly it was this influence that the states which require actual store experience before registration were after when they adopted their policies. What you employers do and say makes a deep impression on the students, and it is encouraging to note that it is constructive. A couple of recent incidents clarified the issue in the writer's mind, and since you readers are participants in the program you too will be interested.

A senior came to class one day and fairly exploded, "did my boss ever give me an examination," and following his explanation of what had taken place, my hat was doffed in respect to that employer. A physician had queried him regarding some barbiturate derivatives whereupon he had informed himself to the best of his ability and then decided to talk the whole thing over with his student clerk. One by one the containers came off the shelf as the two men discussed the composition and merits of the products. By his own admission the student got pretty well confused with the therapeutics of the various "rings and chains," but after some serious study that boy proudly maintains that he is now an authority on barbiturates. That was one of the most constructive pieces of teaching the boy will ever receive, thanks to his boss.

Another student commented at length regarding the habit two of the registered men working in the store had of frequently taking preparations from the shelf and asking him to

comment on their actions and uses. "Those labels read like story books now, he mused, especially when you know the pharmacology of the basic ingredients." The simple practice of those men regularly requesting information about new preparations had completely reorganized the boy's line of reasoning. In fact, it had taught him to reason and use the information he already had. No matter what the form of administration may be, U.S.P. or N.F., non-official or an entirely new preparation, the therapeutic action for the basic medicinal substance remains the same. New forms of administration and new substitutes of a compound are not made to change the principal therapeutic actions of a drug so much as they are intended to eliminate contraindications and undesirable side actions. The faculty of a school uses this idea to work from in teaching, but a little application of it in "your practical laboratory" really drives it home to stay. It helps to make better students.

Calling to mind the comments already mentioned, as well as some which were not so complimentary to either of us too, this conviction prevails. The job of making pharmacists of character, of making our future pharmacists men of rugged individualism is a task requiring the utmost in cooperation on the part of all the institutions with which the students come in contact during their formative years. Employers, faculty, and students, we are all striving to attain the same end, a better profession, so why should not we study our problems together in order that we may enjoy more fully the result of our labors.

L. David Hiner,
Ohio State University.

Is There A Shortage of Pharmacists?

Statistics gathered from 68 schools of pharmacy show that the average output annually has been 1,695 graduates during the past three years. The ranks of pharmacy are said to be depleted at the rate of about 3,000 a year, and the total number of registered pharmacists in the country is stated to be about 100,000 male members. Whether or not there is a shortage of pharmacists is certainly a very debatable question. First of all, there are about 60,000 licensed drug stores

in the country. No less than one-half this number are one-man stores. This would seem to indicate that at the present time there will average about 70,000 registered pharmacists to man 30,000 registered drug stores. Many of these stores, of course, use more than two pharmacists, but the vast majority of them outside the one-man group employ only two pharmacists, and a number of these employ the second pharmacist only as a part-time man. The average number of prescriptions filled in the drug stores of this country runs a trifle over eleven a day. That is not more than about an average hour's work for a competent pharmacist; and, if we grant that the average pharmacist works no more than eight hours a day (and most of them work 12, 14, and even 16 hours per day), that would leave seven hours per day of the average pharmacist's time to devote to other pharmaceutical activities; and, if this conclusion is even 50 per cent sound, the county is adequately stocked, and even overstocked, with competent persons to do pharmaceutical work. The set-up of pharmacy licensure does not contemplate providing for front store clerks, cigar salesmen, soda jerkers, etc. Anybody can do that kind of work.

Another angle that may be debated is whether there is any necessity for half the drug stores that are in business today. In the smaller towns, where there is only one drug store to a town, they are necessary; but in cities, where we find two and three banked up on a street corner and a neighborhood section, all competing and cutting each others' throats for the little bit of business that is in that neighborhood, and when we find them strung along two or three to the block in the business sections of cities, it certainly is cause to make us question whether the community and the persons engaged in such activities both would not be better off if the number of stores were materially lessened. It all depends on the point of view and what is considered the practice of pharmacy. In the modern store more than nine-tenths of the business activity is not of a pharmaceutical nature, and, until there is actually something approaching a lack of skilled pharmacists to perform the necessary pharmaceutical duties arising in each community, it sounds like nonsense to talk about there being a shortage of registered pharmacists.

So long as we have free and open competition in the drug field and any person who can get together a little down-

payment capital is privileged to open up another drug store, whether there is any necessity for it in the community or not, there are at times going to occur what is usually termed a shortage of pharmacists. What this really means is that the good men in pharmacy are either in business for themselves or are employed in pharmacies which are able to pay them adequate compensation and to hold them; and, when there arises the need to employ another man on the part of some individual, he naturally is going to encounter difficulty in putting his hands on such a man P. D. Q. When such openings arise, the drifters and the misfits are quick to apply for the jobs. It is our opinion that there is a large gap that may be bridged before anything like a real shortage of pharmacists will occur in this country.—A. L. I. Winne in the Virginia Pharmacist.

The Probable Help Problem

In 1918 I wrote, "The demand for skilled pharmacists has never been as great, the salaries have never been so large and the number of available pharmacists never so small as at present. Calls for registered pharmacists are constantly being received which cannot be filled because so many young men in that profession have entered some branch of our national service, and many more will be called to the colors."—(Jour. A. Ph. A., 7, 1918, 52.)

These statements, written twenty-three years ago, apply today precisely as they did then. History is repeating itself.

In 1918 the purported shortage became a matter of great concern in certain quarters. Now again there are those who are aroused believing there is in the offing a shortage of pharmacists that may lead to adverse complications. It is proposed that the production of registered pharmacists be keyed to a higher tempo. To accomplish this the desirability of a reduction in educational and licensure requirements is vaguely hinted. Interest in abundant and cheap drug store help or a desire for an increase in enrollments in colleges of pharmacy may, in some instances, be the mother of the thought.

Be that as it may, nothing, of course, could be a greater mistake than a lowering of standards. The present situation

is not alarming. There is a healthy demand for well-trained pharmacists that does slightly exceed the supply. No community, however, is suffering by reason of impaired pharmaceutical service.

Preparing for a great national emergency of necessity creates vacancies in pharmacy. If it were not so, pharmacy would be less important and not as necessary as we like to think it is. The Selective Service Act is affecting every profession, vocation and trade in the land. Help problems are found everywhere and concern everyone excepting the habitually unemployed.

Our country is the dearer for our sacrifices. Since the achievement of our independence, he is the greatest patriot who makes the greatest sacrifices. Longer hours, harder toil, greater responsibilities, more inconveniences generally, are of the first order of sacrifices pharmacists are expected to make.

However, there is a partial solution for the pharmacist with respect to his help problem. It lies in the selection of an apprentice—some high school or junior college boy or girl. If the selection is made systematically, with proper consideration for interest and aptitude, it will be of mutual benefit. The pharmacist will find a partial solution for his help problem and he will have joy and satisfaction in the loyalty and progress of the apprentice.

The apprentice will have practical assistance in selecting a life's work while he is gainfully employed. He will have an income which, if properly conserved, will prove invaluable when the formal program of pharmaceutical education is undertaken. And he gains practical experience necessary for the licensing examination. In the past there has been room for argument about the best time for such practical experience. Just now there seems to be an increasing number of reasons why it should be acquired before matriculation in a college of pharmacy.

R. A. Kuever,
State University of Iowa.

Why Not Advertise Pharmacy?

In pharmaceutical circles frequent reference is made to the activities and strength of the American Medical Association. While there may be occasional disagreement with some of their policies, there is one activity which they sponsor either directly or indirectly which might well be emulated by the American Pharmaceutical Association or one of the allied associations. I refer to the advertising and publicity which the medical profession receives, and specifically that form of publicity which appears in the popular magazines; those articles which pertain to progress in medicine and medical care, medical discoveries, famous members of the profession and the like. Pick up almost any current number of one of those magazines and you will find an article or articles of this type, written by, about, or from an interview with one of the members of the medical profession.

I do not believe you will hear any criticism of this form of publicity. I think that almost anyone will agree it is a fine thing for the profession. Then, is there any reason why pharmacy can not receive some of this type of publicity? From a purely commercial point of view, the drug industry represented by the retail stores, is one of the cogs in the distribution of these periodicals and considering the advertisements of the drug and cosmetic manufacturers, it is one of their strongest financial supporters.

From the standpoint of source of material for such articles, there is a wealth of material to draw from. I name a few, specifically: the historical background of pharmacy; the stories on some of the "pharmaceutical greats"; discoveries made by pharmacists; the educational background required of a graduate in pharmacy; our legal standards and the part they play in pharmacy and medicine and the pharmacist's part in their development and revision; pharmacy's part in the scheme of public health; and the pharmacist's responsibilities under the new Food and Drug Act.

The type of advertising that pharmacy gets at present consists of crude "cracks" and cartoons based on sandwich-making, hardware, sales of silk hose, and the like. Surely nothing to brag about. It seems that one of the biggest problems facing pharmacy today is selling pharmacy as a *profession* and that one of the best merchandising plans for that

selling job is the securing of a little ethical or professional publicity of the type previously mentioned.

Since there is obviously no shortage of materials about which to write it is apparently a lack of capable writers or the will to write, or a lack of cooperation by those periodicals which seem to clamor for the same type of article written by or about a member of the medical profession. Interesting articles can usually be placed providing they are well written and have popular appeal which leaves us with only one answer. We need a pharmaceutical DeKruif. Perhaps something along this line is already being done, and we all sincerely hope so, but if not I can think of no worthier objective than such a plan for selling pharmacy, as a profession, to the laity.

Donald T. Meredith,
Detroit Institute of Technology.

Pharmacy and Inter-American Relations

Pharmaceutical education can and should play its part in developing friendly Inter-American relations. The need is apparent and has been much publicized in the "Good Neighbor" policy of our government. That the republics to the south of us desire this is evident. Several of them have adopted our Pharmacopœia (Spanish Edition). In increasing numbers they send us students for graduate work in pharmacy. Some of their faculty members have come for research and observation. Government officials are included. Dr. Orlando Cattani, whose article on Pharmacy and Social Security in Chile appeared in the last issue of the Journal, was from the Chilean Social Security Board.

American Pharmacy should strive to strengthen this cordial relationship with our professional brothers, not only for the sake of what we can give them but because they too have much to offer in educational experience and in methods of practicing the profession. In many of the republics the pharmacist ranks on a level with the physician. Their flora abounds with plants having medicinal possibilities. Many of their schools publish excellent bulletins on research. Much of this literature is overlooked by our abstract journals.

The solution of the problem lies in a greater exchange of

many things including journals, articles on education and research, students, professors, research workers, visits by government officials, etc. A Pan-American Pharmaceutical Convention at five or ten year periods would do an immense amount of good. A few readers might think that language is a barrier to such proposals. May I remind them that it never has been when the almighty dollar was sought for. As suggested by Dr. Dille in the January issue of the Journal, the A. A. C. P. might well devote some organized effort to improving Inter-American pharmaceutical relations. Whatever we do in this direction will fall on fertile soil and help to make pharmacy a better profession in this hemisphere. The Americas need each other.

Perry A. Foote
University of Florida.

New in the Family

Carol Ruth Jenkins.—Born February 21, 1941, daughter of Prof. and Mrs. Glenn L. Jenkins, College of Pharmacy, University of Minnesota.

Kathleen Nash Ellegood.—Born January 25, 1941, daughter of Prof. and Mrs. John Ellegood, College of Pharmacy, University of Washington.

Marriages

Dr. Melvin F. W. Dunker, Wm. R. Warner post-graduate fellow in pharmaceutical chemistry, 1939-40, in the School of Pharmacy of the University of Maryland, now a fellow in sterol chemistry at Northwestern University, and Miss Viola List, at Frankenmuth, Michigan, were married on February 22, 1941.

Dr. Hsing-han Lei, who is now professor of pharmaceutical chemistry at Tsinghua University at Zeechum in northwest China, has written to his friends in the School of Pharmacy to inform them that he is now married. Dr. Lei received his doctorate from Wisconsin in 1938.

The Editor's Page

The American Institute of the History of Pharmacy is on its way. The story of its organization and the objectives it has set as its task and the general methods it proposes to follow in obtaining these objectives are set forth in this issue of the Journal by Dr. George Urdang, the Director. Much more will be heard about it as the days go by. "Pharmacy is an ancient and honorable profession", so reads the first sentence of the report now known as "Basic Material for a Pharmaceutical Curriculum." Dr. W. W. Charters who directed the Commonwealth Study to find out the function of the druggist wrote that sentence. When he first read it before his advisory committee, he was asked if he always had had that opinion of pharmacy. He replied he had not. He learned it as a result of the Commonwealth Study. Many of us engaged in many phases of pharmaceutical work need to learn that same lesson. Those associated with Dr. Charters will recall the stress he placed upon the need of pharmacists developing a professional morale and showed the part history has in cultivating it. We have every reason to believe that the Institute of Pharmacy will do equally as much for American pharmacy as the Institute of the History of Medicine has done for American medicine. On the second of April a meeting was held at the University of Wisconsin to further perfect the organization. On another page is given a brief report of this meeting. It was encouraging to see the support that is being given the Institute by President Dykstra, by the dean of the College of Arts and Science, by the department of history, by the dean of the medical school and best of all by the retail druggists of the state of Wisconsin and the druggist women's organizations of the state, who have undertaken to help raise the money needed for financial support. Chancellor C. S. Boucher of the University of Nebraska, who three years ago as Chancellor of West Virginia, conferred an honorary degree upon our own Roy Bird Cook because of his attainments in the fields of pharmacy and history sent the following message.—*"The American Institute of the History will soon become an important source of inspiration and strength to the American*

Pharmaceutical Association. The Institute can and will contribute much that is needed to give proper perspective of and needed insight into major problems in the pursuit of scientific research and in the development of the best program for pharmaceutical education. This has been eminently true in the field of medicine, where such remarkable developments in research and professional education have been produced in the last three decades. Pharmaceutical scientists and the public they serve are both to be congratulated on the launching of the Institute." Chancellor Boucher is an historian in his own right and he speaks convincingly and with great sincerity. The American Institute of the History of Pharmacy is a national institution and we are grateful to those who have had any part in its inception and we look forward with eagerness as it begins its service to pharmaceutical education and practice.

Much has been said in the last twelve months about a shortage of pharmacists. Much of this has come from the politicians and the cram school men and the hundreds of "assistant" pharmacists in the United States who would like to find a way to register as qualified pharmacists under the law. Strangely enough there are many school men that are concerned about this shortage and consider it a real menace. The writer has been criticized for saying there is a wholesome shortage in his state. By that he means there are no good pharmacists out of work and no drug stores seem to be suffering from lack of capable registered men. To go a step farther, there are many towns in his state where there are two stores in which the druggists would be better off and the community would be better served if there was but one store. There are many other towns where there are three stores where both druggists and community would be better served if there were but two. In his home town there are many stores where one has to study the windows and perhaps go inside before one can tell whether it is a drug store or a liquor emporium. If it comes to a showdown these store owners could swap their liquor stocks for drug stocks and release a lot of registered men. They would find they do not need a registered man to run a liquor store and the exchange would materially increase the respect of the layman for the

drug store. There are probably other places and other states where this could be done to the advantage of pharmacy if the matter were given a little thought. Luckily, the boards of pharmacy have exhibited their traditional sanity and good sense in these trying times in the face of this excitement. Mr. A. L. I. Winne has given the sanest analysis of the situation we have seen (see editorial page) and what he says is deserving of sober thought. Dean R. A. Kuever calls attention to the fact that a partial solution of the help problem rests with the druggists themselves and by selecting the finer and more intelligent high school students as apprentices, we will have a fine type of student when the time for formal education arrives. In this way the druggist has a great opportunity and privilege and I believe an obligation for influencing the future personnel of the profession of pharmacy. We can well profit by the experience of the chemist in the last world war. In the hectic days of 1916, 1917 and 1918 so much was said about "the chemist winning the war" that men were led to think that the only place in a college was the chemical laboratory and toward these laboratories students flocked like bees to a hive. Dr. Samuel Avery, an organic chemist in the Chemical Warfare Service, in September 1918 showed me a stack of applications for men who wished to be transferred from the ranks to chemical training so they could better serve their country. Dr. Avery remarked that it was unfair to the youth to lead them into this specific field with the understanding that they would win the war and that industry would absorb them after the war was over. He said "We need a few chemists to bleach the mustard gas out of the trenches in the fall, but within a year we will be hiring chemists with the doctor's degree for $1,500 a year to teach freshmen at the University of Nebraska. Both of those prophecies came true. We should not make that mistake in pharmacy.

The address given by Dean W. F. Rudd as president of the Virginia Academy of Science at the 1940 meeting is printed in full in the January 3, 1941, number of Science. Dean Rudd laid plans for a long-range program for the academy which if carried out should make the work of the

academy much more effective. One of the finest trends in these latter days is to see the interest which has developed in many of our national pharmaceutical organizations in the planning of long-range programs. There is, however, an element of danger in long-range planning. The danger lies in the fact that the rank and file of humanity rests on its oars while someone supposedly in a key position does the planning. What pharmacy most needs is a lot of creative thinking and no one has a copyright on that mode of thought. Another danger in long-range planning is that thought will be regimented. If that happens long-range planning will defeat its own objectives. Progress depends on the presentation of different viewpoints. A better way to do things will never be found if everyone has the same view. The other day while visiting the University of Wisconsin the writer asked a fine young man for an editorial for this journal to express his viewpoint. His reply was that he was afraid to stick his neck out. And that is just the trouble. If all young men would stick their necks out, they would grow faster and pharmacy would become richer. What pharmacy needs is a lot of young men who will stick their necks out. Men of maturity and experience need just that kind of support from the younger men. Dean Rudd's plan which he has mapped out for Virginians contemplates activity for the whole group. It is inspiring to see pharmacists contributing constructively to the cause of general science. Dean Rudd is to be commended and pharmacy is to be congratulated because of his effort.

Dean W. Paul Briggs in an address before the 1940 meeting of Maryland Pharmaceutical Association made a statement to the effect that if he could have three wishes fulfilled they would be: first, that pharmacists rededicate themselves to pharmacy; second, a crystallizing of our objectives and a harmony of interests to the end that the potential forces of pharmacy might achieve the unlimited heights which should have been reached long ago; and third, the development of pharmaceutical services on a public health basis so that the blessings of a full and useful life might be the privilege of all who follow pharmacy as a profession. He calls

attention to the fact that the conditions in the body pharmaceutic which we recognize as detrimental to the profession, came about in so gradual a manner that they were painless. In no single instance did any major change arrive with a dramatic suddenness sufficient to awaken pharmacists to the dangers in time to defend themselves. But having come in, they are no longer painless. Neither have they reached a stage of malignancy where they cannot be cured by our own efforts. The question is how can a cure be best accomplished. The Dean calls attention to the fine cooperation, nationally, between different pharmaceutical organizations that has been brought about through the National Drug Trade Conference. He suggests a counterpart of this body be established within each state. Such state organizations made up of retail druggists, wholesalers, manufacturers, teachers, board members and law administrative officers working together on their local problems would be capable of great influence and by their united efforts the problems of pharmacy would be solved. In principle we stand with Dean Briggs. It may not be necessary to have an organization to bring it about. We already have a living illustration of what this sort of counseling together can accomplish in the district meetings of college faculties and board members. The fine results which have come from these meetings is not due to the fact that a lot of papers have been prepared and read. The value in these meetings lies in the fact that we just sit around a table and talk things over, and we limit our conversation to the things that concern us in our own districts. One of the remarkable discoveries I have made in our own district is that when we gather around the council table we think we have differences. When we get up we recognize our interests are common and our objectives are the same. Minds have been stimulated by various viewpoints and that is as it should be. The priceless thing however that has come out of this counseling is a fine comradery. I find myself wanting to call all these board members (some of them I have never seen before) by their first names. Dean Rogers of Minnesota puts it another way when he says he would not miss one of these conferences even if we held them in Honolulu. I do not know why he picked on Honolulu. He has his own ideas. The state is a still smaller unit. We need the stimulus of the state association, but we

need more than that, in each state we need the council table that we may counsel. And around that table must be represented every pharmaceutical interest in the state. When that time comes, pharmacy will be different. It will come. Dean Briggs is on the right track.

"The heart of her husband doth safely trust in her, so that he hath no need of spoil.—She looketh well to the ways of her household, and eateth not the bread of idleness. Her children arise up and call her blessed: her husband also, and he praiseth her."—These are the words of king Lemuel, the prophecy that his mother taught him. And with these words we pay tribute to the memory of Elinor Lloyd Marsh. We share with her husband and the children their sorrow—and rejoice with them in the hope that the Easter time brings.

The passing of Dr. Charles Wallis Edmunds removes from our midst one of the most lovable characters of American medicine. His colleague Dr. Howard B. Lewis has written so well of his service, it would seem that nothing more could be said. And yet, it is in our hearts to bear a word of tribute. Few men carried themselves with such dignity. He always seemed to be unconsciously upholding the dignity of his illustrious predecessors, Abel and Cushny and the traditions of Michigan of which he was a part. Abel, Cushny, and Edmunds, more than any other group of men in their time separated the useful tools for the treatment of disease from the useless and brought to the materia medica of their day a solidarity and dignity it had not before enjoyed. It was a crowning tribute for this type of service, when Dr. Edmunds was elected President of the United States Pharmacopœial Convention in 1940. Charles W. Edmunds still lives in the hearts of men and for that for which he stood, we will continue to stand. May we have the ruggedness of character which was exemplified by his love for the coast of Maine, and may we have the gentleness and humility of spirit exemplified by his love for the flowers in his garden which he nurtured and carressed with his own hands. We shall remember him always and especially each year we will be thinking of him and his service as the Easter lilies bloom.

Rufus A. Lyman.

Gleanings from the Editor's Mail

The attached Pharmacy Week Radio Address (printed in this issue) by Mr. Boberg of the Vocational Education System is a sample of what is being done by our Circuit Instructor, under the George-Deen Act. It clearly demonstrates the serviceability of this system and we pass this example along in the hope that you will find room for it. As you know, Mr. Boberg is the "first Circuit Instructor in Pharmacy" in the country. His work is designed to reach the practicing pharmacist. The Circuit manner of coverage makes it possible for him to reach the one-man pharmacist store owner regularly. Mention of this work in the pages of your valuable publication now, might prove very timely, following as it would the recent important meeting in Chicago which was designed to increase the scope of this work. (See pages 164 and 206 of the February 6th N.A.R.D. Journal.) Representatives of the A.A.C.P., A.Ph.A., N.A.B.P,, and N.A.R.D. met at the University of Illinois, College of Pharmacy, in a two day session to draft a comprehensive outline for a program of education for the practitioner of pharmacy. Wisconsin, as a four year pioneer in the George-Deen movement, feels a justifiable pride in seeing this work take hold nationally, for we are of the belief that any permanent good which will come to pharmacy must start with an improvement of the individual pharmacist.

S. H. DRETZKA, President,
National Association Boards of Pharmacy.

February 10, 1941.

We have the honour to inform you that we appreciate very much our relations with your esteemed organization and we shall be glad to continue our mutual exchange of publications in the year 1941.

M. LOEVENBERG, Director,
the Bureau of Book Exchange, Ukrainian Society
December 12, 1940. for Cultural Relations with Foreign Countries.

Through the kindness of Professor Esteban N. Melendez. I have pleasure in enclosing herewith a cheque for the subscription to "The American Journal of Pharmaceutical Education" during the year of 1941. As I am a faculty member of the University of Buenos Aires, Republica Argentina, I feel sure that owing to this circumstance the above Journal will be of great interest to my country.

DR. OSCAR A. ROSSI,
February 2, 1941. University of Florida.

Please accept my tardy thanks for the two copies of your Journal. I beg you to believe me that it is very refreshing reading even for such a complete ignoramus as your obedient servant. Cattani's and Viehoever's articles are most illuminating. And then, of course, Plein's article on Latin in Prescriptions; it is nice to realize again that the link between pharmacy and the classics is indefeasible; I almost feel like

submitting my own article on certain medical problems in antiquity but I am afraid it would not be of interest to you. I am sending the second copy to the Hebrew University in Jerusalem for their medical journal.

MICHAEL GINSBERG, Professor of the Classics,
February 5, 1941. University of Nebraska.

We should be glad to know if you will agree to exchange your valuable Journal, American Journal of Pharmaceutical Education, for our Tohoku Journal of Experimental Medicine, which appears monthly (two volumes a year). A specimen number, the latest issue, is being sent you under separate cover. We beg you to address your publication to; Medical Library, Tohoku Imperial University, Kitayobantyo, Sendai, Nippon.

DR. Y. SATAKE, Editor
February 3, 1941. The Tohoku Journal of Experimental Medicine.

We have just received our first copy of your Journal and feel that it is going to be a real asset to our faculty. Can you advise if any or all of the first four volumes are available through your office?

F. N. HUGHES
February 7, 1941. Ontario College of Pharmacy.

I believe, however, it will interest you to know that when Leslie C. Jayne joined the faculty of the Brooklyn College of Pharmacy I acquainted him with the value of the Journal. He immediately subscribed to Volume V and took advantage of your special offer to obtain the other four volumes. These arrived only the other day and I forwarded them to the State Education Department of Albany, New York where Mr. Jayne is now serving as secretary of the State Board of Pharmacy. His immediate response was: "These Journals are as valuable and important to me as secretary of the State Board of Pharmacy as they would have been as Professor of Chemistry." And to this, all I can say is that we are proud of Secretary Jayne, who can appreciate a good thing when he sees it.

BERL S. ALSTODT
March 17, 1941. Brooklyn College of Pharmacy.

Relative to plans for the next meeting: It appears quite certain that our next meeting will be held in Dallas during the week of December 20, 1941-January 3, 1942. I have tried to secure some interest in Durham, New Hampshire for June with no encouragement. If you do not receive an announcement for inclusion in the April issue of the Journal, you will know that no session is planned for the Pharmacy section at the June meeting. I have started work on the program for the Dallas meeting and hope to make it one of the most successful pharmaceutical science meetings ever held in the great southwest. I do not recall whether I wrote you that Dean Reese was to succeed Dean Spease on our committee on program.

GLENN L. JENKINS
March 7, 1941. University of Minnesota.

The Miss Chandler, a new subscriber to the Journal which you mentioned in your letter to me, is a graduate student. I have attempted to acquaint all of our graduate students as well as the

undergraduate students with the Journal, with the result that they have become interested to the point where they want to take it for their own files. I think it is a splendid way of getting them informed of what is going on in pharmaceutical education.

L. DAVID HINER,
March 15, 1941. Ohio State University.

The twenty-fourth annual meeting of the American Council on Education will be held in Washington, D. C. on May 2-3, 1941. I hope that you will reserve these dates on your calendar and make every possible effort to attend. An interesting program is being developed. We have now received the report of the committee which has been reviewing the work of the Council, and this document will also naturally be of considerable significance in planning for the meeting. The program will be sent to you soon.

Under separate cover we are sending you this week a complimentary copy of *Organizing Higher Education for National Defense.* This is the report of the very successful conference which the National Committee on Education and Defense sponsored in Washington on February 6. I am certain that you will want to read it carefully. If you wish to have additional copies for your staff, they can be obtained at fifty cents each.

Within the next two weeks we will also send you a copy of another study of the Council, *Cooperation in Accrediting Procedures.* This is the report of the conference of twenty-nine accrediting associations which the Council sponsored late in 1940. Since both of these studies deal with issues of immediate importance to education, we will be pleased to have your reaction to them.

GEORGE F. ZOOK,
March 19, 1941. Washington, D. C.

All exemptions from the College of Pharmacy Graduation Clause of the New Mexico Pharmacy Law expired as of May 20, 1940. There being no college or department of pharmacy within the state, we are dependent upon the schools of other states to supply our demands for registered pharmacists. For the convenience of graduates who desire to register by examination in the state, the Board of Pharmacy has changed the dates of its meetings so that they will be held on the Monday and Tuesday following the 15th of January and July of each year. The next regular meeting will be held in Albuquerque, New Mexico, July 21st and 22nd. We would appreciate it if these facts are called to the attention of your graduating class, together with the information that full particulars as to requirements, fees, etc., for examination may be obtained from this office. Thanking you for this courtesy and assuring you of our cooperation In upholding the standards of pharmacy, we are,

New Mexico State Board of Pharmacy
March 19, 1941. H. H. HENRY, Secretary.

Enclosed find check for $2.00 for a year's subscription to the American Journal of Pharmaceutical Education. This Journal has proven to

be very valuable for pharmacy and I wish you every success toward its continued publication.

P. H. DIRSTINE,
March 22, 1941. State College of Washington.

It seems that the Press is getting into the habit of twisting and contorting the news items from the University of Kansas. For example: (1) We are sending our senior students to Kansas City, Kansas, one week each semester to work in the hospital pharmacy of the University of Kansas. The Press reported in this connection that we were having our students work in the drug stores in Kansas City. Of course we had never contemplated such a thing. (2) Several departments at the University have organized programs in connection with national defense. The School of Engineering also has a new dean this year and since the Engineering School was giving a short course to train men to meet certain so-called emergency requirements, the Press jumped at the conclusion that the School of Pharmacy, having a new dean, would initiate such a program and so it was reported. Needless to say, we have no intention of giving any short courses whereby men can be made available to practice pharmacy in the Army who have had only a few short weeks of study. We have a difficult enough time training pharmacists in four years. (3) The University of Kansas is celebrating its diamond anniversary this spring and proposes to trace the development of the University from its small beginning to its present position. We also plan to picture the University as we hope it will be in the future. The Press reported that we were celebrating our diamond anniversary and thinking that diamond meant 50 years instead of 75, decided to make a typical nauseating story of the gay nineties which you say were not so gay and which I do not have the slightest interest in reproducing. We have no intention of building any museum or looking backward to "the glory that was Greece and the grandeur that was Rome". I am one of those who believes that the present is the best time that has ever been and hope the future will be better than the present. I listen courteously to those who say that the "good old days" of pharmacy have passed, but I don't feel that they were such good days. However, the pharmacists in the past have made definite contributions and these contributions we should acknowledge. I am not of the opinion that there was nothing worth while seventy-five years ago. In fact, I am inclined to believe that those pharmacists had something which we are beginning to appreciate. They had the confidence of the people whom they served even though they were not in a position to serve them as well as is the pharmacist of today. We hope to use the educational approach which has served many times; that is, a contrast of the equipment of seventy-five years ago and that of today. If a person can see the crude containers used at Leavenworth, Kansas in 1866 and compare these with the types used today, we feel that he cannot help realizing that we have gone a long way. Our intentions are to reproduce as accurately as possible the first real drug store west of the Mississippi river. There is to be no false glamour associated with this. All the displays are for their educational value. Probably some of those who see these will believe that the so-called "good old days" were not so good after all and that it is mighty nice to be living

in 1941. For instance, in 1866 the druggist supplied smallpox scabs to inoculate against this disease. This crude method of inoculation is shocking to the people of today when they are shown that this actually took place and is not a fairy tale concocted for their amusement.

J. ALLEN REESE
University of Kansas.

February 6, 1941.

Enclosed is money order for $1.60 for which we should appreciate receiving the first four volumes of your journal with indexes. We feel that your plan of making a most nominal charge for these back numbers is most commendable. With regard to any information regarding Canadian pharmaceutical education, you may be interested in the fact that our own College is the oldest in Canada having been chartered in 1871 and is undergoing both a physical and an educational expansion at the present time. If you feel that a review of our educational set-up would be of interest to your readers we should be pleased to summarize it for you at any time. It does differ somewhat from the A.A.C.P. plan of a four year college course with no preliminary apprenticeship system required in all states. We require five years of high school and in Ontario three years of apprenticeship, while our college course for license is just two years. Beginning in 1942 we shall have a third year optional course at college, which with the fifth year high school training in cultural subjects will be parallel largely to your own four year courses. Other Canadian provinces have a little different set-up. Again thanking you and assuring you of our desire to make any contribution which will be of interest to you.

F. NORMAN HUGHES
Ontario College of Pharmacy, Toronto.

February 24, 1941.

In the last issue of the Journal Dr. Dille suggested that the Problems and Plans Committee undertake to study ways and means of establishing cordial relations between colleges of pharmacy here and in South America. You and the readers of the Journal might be interested to know that among our graduate students we have four from Puerto Rico. Dr. Oscar A. Rossi, member of the faculty of the School of Pharmacy and Biochemistry of the University of Buenos Aires, is also doing postgraduate research here. Dr. Rossi brought with him a parchment scroll of greetings from his student body to our students. We are sending one back to Dr. Rossi's students. It was beautifully drawn by a student in our School of Architecture and Allied Arts. I enclose a photograph of each scroll.* They were formally exchanged at a University convocation on February 13. The University of Florida has an Institute of Inter-American Affairs, the object of which is to bring about a better understanding of mutual problems in which the United States and Latin American countries are interested. Our School of Pharmacy is playing its part.

P. A. FOOTE
University of Florida.

February 20, 1941.

*See opposite page.

The students of the School of Pharmacy of the University of Florida send warmest greetings and best wishes to the students of the School of Pharmacy and Biochemistry of the University of Buenos Aires.

It is our sincere desire that the friendly relations between the Argentine and the United States continue in a spirit of progress. Let our profession aid the Americas in forming an unbreakable bond of peace.

February, 1941

El Centro Estudiantes de Farmacia y Bioquimica en nombre de los alumnos de la Escuela de la Universidad de Buenos Aires, hacen llegar un mensaje de cordialidad y simpatia a los Estudiantes de Farmacia de la Universidad de Florida, anhelando estrechar los vinculos espirituales que unen a los Argentinos con sus hermanos de Estados Unidos de Norte América, y colaborar en un ideal común de paz, democracia y libertad para asegurar sus beneficios y dignificar la profesión.

Tesorero — Secretario General — Presidente

Noviembre de 1940.

Thank you for the January issue of the American Journal of Pharmaceutical Education and for your note calling attention to certain pages.

I am interested in the movement to secure financial support for pharmaceutical education and research from the money makers in the pharmaceutical industry. This seems to me to be thoroughly appropriate and I hope that it may be successful.

C. S. BOUCHER, Chancellor,
February 4, 1941. University of Nebraska.

The National Committee on Education and Defense is sponsored by the American Council on Education and the National Education Association; George F. Zook and Willard E. Givens, co-chairmen. Under the big umbrella is gathered the most of the important national associations containing in their membership the colleges, universities and other groups concerned with education. Therefore, this committee represents every phase of education in the national defense program. Dr. Francis J. Brown, loaned by New York University for the purpose, is liaison officer for correlating the commtitee's work with the national defense program.

H. EVERT KENDIG,
February 2, 1941. Temple University.

Recent Subscribers

Howard College, Birmingham, Alabama. Charles Larwood, University of Grand Rapids, Grand Rapids; Anton Hogstad, Joseph B. Vaughan, Albert C. Smith, Simon Benson, Ferris Institute, Big Rapids; Walter M. Chase, Park, Davis & Co., Detroit, Michigan. Robert A. Hardt, Larchmont; St. John's College of Pharmacy, Lyman D. Fonda, Leslie C. Jayne, Brooklyn; Fanchon Hart, Elinor Kerker, Columbia University, New York City, New York. George V. Doerr, McKesson & Robins, Inc., Minneapolis, Minnesota. A. Mesa de Ponce, Vibora, Havanna, Cuba. Eldon Roberts, Jr., Medical College of Virginia, Richmond, Virginia. Katherine Graham, Sears, Roebuck & Company, Chicago, Illinois. Ontario College of Pharmacy, Toronto, Canada. Russell Brillhardt, Verona; Emil P. Martini, Hagensack, New Jersey. C. Suvagondha, Philadelphia and Frank H. Eby, Springfield, Pennsylvania. Florence Chandler, Arthur E. Schwarting, Anthony S. Ridolfo, Joseph A. Kapotocky, Alfred W. Snider, Ohio State University, Columbus, Ohio. Virginia Gilliland, Pullman, Washington. Dean J. Allen Reese, University of Kansas, Lawrence, Kansas. Library of University of Oklahoma, Norman, Oklahoma. Dean Floyd J. LeBlanc, South Dakota State College, Brookings, South Dakota.

Notes and News

Dr. Paul N. Leech, director of the chemical laboratories of the American Medical Association since 1923 and secretary of the Council on Pharmacy and Chemistry since 1932, died in Chicago on January 14, 1941.

During 1940, 605 contributions to the increasingly popular field of Bioclimatology were summarized in Biological Abstracts. The Bioclimatology-Biometeorology section proper reported 234 contributions that had appeared in 127 current periodicals and reviewed 31 books. Reference to climate and weather effects on human physiology, animal physiology, animal and plant behavior were reported in 340 abstracts in other sections of Biological Abstracts, and their subject matter was outlined, month by month, at the beginning of the Bioclimatology-Biometeorology section. This section is contained in the complete edition of Biological Abstracts, and also in Section A, Abstracts of General Biology and Section D, Abstracts of Plant Sciences.

The American Association of Colleges of Pharmacy has been elected a member of the National Committee on Education and Defense and President Kendig has been appointed to represent the Association on the Committee. The Committee is sponsored by the American Council on Education and the National Education Association, and represents every phase of education in the national defense program.

Massachusetts becomes the forty-seventh state to pass a prerequisite law. The bill has been signed by the governor and the law becomes effective January 1, 1945. During the month of March the Department of Health of the city of New York carried on an educational campaign which had as its object the dissemination of information concerning the control of cancer. Drugstore window displays were used which featured the land marks in cancer control. A symposium on the part of pharmacy in cancer control was held at the Hotel Pennsylvania on the evening of March 18th. The program was sponsored by a number of health agencies including the Association for the Advancement of Professional Pharmacy. The Association has begun the publication of *The Interprofessional Bulletin.* Dr. Leonard Piccoli of Fordham is the editor.

Friends of Mr. John Cameron, delegate of the British Pharmaceutical Society to the Richmond meeting of the American Pharmaceutical Association will be pleased to learn that he is engaged in war work as a civil servant in the Department of Health for Scotland. According to a recent letter received by Dr. Joseph B. Burt, he is acting as an adviser on pharmaceutical matters for a number of hospitals in Scotland. His present schedule of duties requires him to commute from Glasgow to Edinburgh daily, a round trip of approximately 100 miles. He reports that he is in good health and enjoying his work. He would be pleased to hear from his many American friends. He may be addressed at St. Andrew's House, Edinburgh, Scotland.

Medical College of Virginia, School of Pharmacy.—Dr. R. D. Hughes of the biological department, who graduated from Annapolis and is a Reserve Officer in the Navy, has been called to active service.

Mrs. Hughes, who is also biologically trained and who has had an extensive teaching experience, is carrying on the work of the department during his absence.—Dr. Harvey B. Haag has been elected by the Council of the A. Ph. A. to take the place of the late Dr. Bernard Fantus on the Committee of the National Formulary. He will serve as chairman of the Sub-Committee on Pharmacology and Posology.—Prof. T. D. Rowe, who was for five years associated with Dr. Crockett in the department of pharmacy and who has been on leave at Wisconsin, session 1940-41, will return to the College in the summer. He has been promoted to an associate professorship and will be acting head of the department of pharmacy beginning with session 1941-42. He and his charming wife will receive a most cordial welcome on their return.—Plans are going ahead for the Crockett Memorial Dispensing Laboratory which it is hoped will be completed during the summer and be ready for dedication at the opening of session 1941-42.—Commodious new offices for the dean of the school of pharmacy have been provided. Rooms formerly occupied by President Sanger in McGuire Hall afford just the quarters needed by the school.—New Members elected to Rho Chi, session 1940-41, are Raymond S. Brown and Herman M. Nachman.—Members of the senior class visited the plant of Parke, Davis & Co., early in March.—Dr. Herman P. Thomas of the department of economics and sociology, has been granted a leave for further study in his field at Harvard, session 1941-42. Dr. Edward G. Cale will do Dr. Thomas' work in the pharmacy school during the latter's leave of absence.

Philadelphia College of Pharmacy and Science.—Mr. Josiah K. Lilly has presented the collection of apothecaries' jars and mortars, formerly owned by the late David Costelo of New York, to the College.—Dr. John N. McDonnell has recently been appointed curator of the museum.—The Breyer Ice Cream Company of Philadelphia has established a scholarship to be awarded to the student who in the first semester of the freshman year attains the highest general average in his studies. The scholarship affords the recipient $300 a year for four years. This year the prize went to Paul Trexler Eby, of Lancaster, Pennsylvania. In his high school days he made the National Honor Society.—The research and control laboratory of the Commission on the Standardization of Biological Stains has been moved from the Arlington Experimental Farm at Arlington, Virginia to the College campus. The laboratory will be under the direction of Mrs. Anis P. Bradshaw with Drs. Louis Gershenfeld and Arthur Osol cooperating.—*Science News* and *Sigma News* are two new scientific publications put out by the Sigma Societies and a tri-weekly newspaper and a monthly humor magazine is being published by the student activities group.—A new volume of popular science talks by the faculty has just been published.—Sixty-six pharmacists attended the third annual Seminar on Modern Pharmaceutical Practice on January 27 and 28.

State University of Iowa, College of Pharmacy.—Willis P. Blackwell, who received the master's degree in pharmacy at the mid-year and who has held a hospital assistantship, has been replaced by Harry A. Austin who will work for an advanced degree.—*The Iowa faculty has again subscribed 100 per cent. to the American Journal of Pharmaceutical Education.*

Detroit Institute of Technology, College of Pharmacy.—The college annually sponsors a series of special lectures and educational pictures to supplement the usual class room instruction. To date, lectures have been given by a number of representatives of several pharmaceutical manufacturing and wholesale drug houses, managers of large chain systems, officers of the Michigan Pharmaceutical Association, and prominent retailers of the city.—Mr. R. S. Warner has resigned from the staff in order to continue graduate work at the University of Michigan. His place has been taken by Dr. W. S. Lundahl who received his early pharmaceutical training at Ferris Institute. He later studied at the University of Southern California and obtained the degree of Doctor of Philosophy from the University of Michigan. He is teaching the biological sciences.—Health Education Week under the joint sponsorship of the Wayne County Medical Society, Detroit District Dental Society, Detroit Board of Health and the Detroit Institute of Technology was held during the week of February 17-23. Six health talks were given by outstanding professional men of Detroit. The program was given and the health exhibits were on display in the Y. M. C. A. building.

University of Minnesota.—The fifth Pharmaceutical Institute was held at the Center for Continuation Study on February 24-26. Besides members of the pharmaceutical and medical staffs of the university, the following appeared on the program: Dr. Frank O. Taylor, Parke Davis and Company, Dean Earl R. Serles, of the University of Illinois, Dean B. V. Christensen, Ohio State University, Dr. Robert P. Fischelis of New Jersey, and President A. L. Malmo of the American College of Apothecaries, Duluth.—Professor Gustav Bachman has been reappointed to the Minnesota State Board of Health.—Laurine D. Jack and Harold Urist received the Doctor of Philosophy degrees at the winter quarter commencement exercises.

University of Oklahoma, School of Pharmacy.—The Alexander Drug Company of Oklahoma City has presented to the pharmacognosy department many interesting items for its cosmetic packages museum. Among the articles is a perfume sales kit, a set of Schimmel's Reports, several oil of geranium frappe 101 bottles from Grasse, France, and a molded and frosted violet toilet water bottle.—The fourth annual school for retail pharmacists and sales personnel was held on the campus February 19-21. The program covered both the professional and commercial fields. It was sponsored by the University of Oklahoma, the Oklahoma Pharmaceutical Association, the Drug Travelers Institute, the Oklahoma Board of Pharmacy, the Fox-Violet Drug Company, and the Alexander Drug Company. There appeared on the program representatives of many pharmaceutical manufacturing concerns from all parts of the country.—Dr. Ralph Bienfang discussed the subject of perfumes before the chrysanthemum unit of the Norman Garden Club on January 16. He has also been invited by Dr. O. Glasser of the Cleveland Clinic to contribute a chapter on the medical and physiological aspects of odors for the coming "Handbook of Medical Physics."—The eigth annual meeting of the Oklahoma University Pharmaceutical Association was held on March 7. Papers were presented during the morning and a general session was held in the afternoon. Many prizes were distributed for excellency in scholarship in the various classes and different subjects.

University of Florida, School of Pharmacy.—The seniors were presented with complimenatry memberships in the Florida State Pharmaceutical Association at a special meeting of pharmacy students on January 21.—In cooperation with the Florida Medical Association, the Bureau of Professional Relations of the school has published a Florida formulary on 3 x 5 cards placed in a steel file box. This formulary is being presented to each physician and drug store in the state through personal contact by Charles R. Jordan, Associate Director of the Bureau.—A new animal room has been finished for the department of pharmacognosy and pharmacology. It is equipped with a modern ventilating system.—On March 19 Arthur G. Zupko and Dale R. Clark were initiated into Rho Chi.

Oregon State College, School of Pharmacy.—Dr. Ernest L. Beals, assistant professor of pharmacy spoke before the January meeting of the Oregon section of the American Chemical Society, his subject being "The Discovery of Vitamin K."—A motion picture entitled "With These Weapons" released by the American Social Hygiene Association program under the auspices of the Marion County Public Health Association was shown at the January 15 meeting of the Oregon State College Pharmaceutical Association.—A pharmacy edition of the Barometer, college daily, was published February 11. Faculty and students of pharmacy assisted with the preparation of copy for the edition. Pharmacy was the first of several special school editions to be published during the current year.—The first of a weekly series of seminars for senior pharmacy students and faculty was held February 27. Considerable student interest is being manifested in these meetings which have been designed to encourage student study of current developments in pharmacy and related fields.—On March 5, the third annual biology colloquium was held on the Oregon State College campus. Dr. C. B. Van Niel of the Jacques Loeb laboratory of the Hopkins Marine Station, Pacific Grove, California, led the program. The colloquium was sponsored by Phi Kappa Phi, with the cooperation of Sigma Xi and Phi Sigma.

Western Reserve University, School of Pharmacy.—Dean Edward D. Davy is convalescing at his home. He recently underwent an operation at the University Hosiptal.—Roger K. Lager, '35, former instructor in pharmacy and chief pharmacist in the University Hospitals, has accepted a position with the Continental Hospital Laboratories, Inc., of Cleveland, where he is in charge of the production and control of parenteral fluids. Robert P. Stockhaus, '27, was appointed instructor in pharmacy and chief pharmacist in the University Hosiptals replacing Mr. Lager.—An extension course with a series of lectures and demonstrations is being conducted under the direction of Dean Davy in cooperation with the Northern Ohio Druggists' Association. Some of the subjects being discussed are "Some Manufacturing Techniques with Professional and Economic Values" and "Hypnotics, with Special Reference to the Barbiturates."

Ohio State University, College of Pharmacy.—Rho Chi has inaugurated a series of meetings at which the graduate students and seniors are presenting papers. Mr. Ridolfo, formerly of New Jersey College of Pharmacy, gave a paper on "Derris" which has been published in the Ohio Conservation Bulletin. Mr. Schwarting, formerly of

South Dakota State College, spoke on Medicinal Plants of Ohio.—Miss Elizabeth Brown, who was the 1940 winner of the scholarship plaque presented by the Fairfield County, Ohio State University Alumni Club, is a senior student. Her accumulated scholastic average is 3.18 out of a possible 4.0.—Seniors recently elected to Rho Chi were Hugo E. Hessman, Karl R. Schauermann, Julius J. Werner, and Roger E. Wrede. At the ceremonial dinner, Dr. Carl Krieger, biochemist of the Wisconsin Alumni Research Foundation, spoke on the method of assay of vitamin D.—Dr. Conrado F. Asenjo, who is connected with the School of Tropical Medicine of the University of Puerto Rico, is now carrying on several research projects involving medicinal plants native to the Island.—Through the cooperation of Mr. E. G. Kuenzi, Chief Pharmacist of the Wisconsin General Hospital, a course in hospital pharmacy has been established for the benefit of the pharmacy students.—Dean B. V. Christensen of Ohio State spoke before the students on February 26 on "Trends in Pharmacy". He urged that more students enroll for graduate work in pharmacy in order to supply the need for teachers with the doctorate in this field.

Temple University, School of Pharmacy.—Dr. Frank Eby, professor of pharmacognosy and botany, states the sources of many of our drugs are the out-of-the-way spots in distant lands and affected directly by the war. This is especially true of the gums and perfumes which are so essential in the manufacture of cosmetics. The price of such commodities may be expected to advance.—Dean H. Evert Kendig will be honored at a testimonial dinner to be tendered him by the faculty and alumni of the University on May 8 in recognition of his forty years of service as a teacher of pharmacy and medicine and as a national figure in the promotion of pharmaceutical education and practice.

Columbia University, College of Pharmacy.—Professor Arthur W. Thomas of the department of chemistry and Miss Eleanor Kerker, assistant registrar, have been made honorary members of the alumni association.—Leslie Jayne, 1925, has been appointed secretary of the New York board of pharmacy.—Dr. George K. Mar, 1934, is in charge of the Bureau of Medicinal Legislation of the National Health Administration of the Republic of China in Chungking.—Professor Horace T. F. Givens of the chemistry department has resigned and will be associated with the Bilhuber-Knoll Corporation of Orange, New Jersey. —A faculty committee has prepared an aptitude test for entering students which it hopes, after it has been tested, to make available to other institutions.—A Pharmacy Week display originated by the students won second place among the colleges competing.

University of Maryland, School of Pharmacy.—Plans are being formulated for the centennial celebration of the School of Pharmacy on June 4 and 5. The program will include the granting of honors to prominent pharmacists, the presentation of papers on pharmaceutical progress and education, and entertainment features. It is hoped that schools of pharmacy throughout the country will send representatives to take part in the celebration.—Kenneth E. Adams, Jr., who has held a William R. Warner fellowship in pharmaceutical chemistry for the past two years, has been awarded a post-doctorate fellowship in chemistry at the University of Illinois.

University of Washington, College of Pharmacy.—Dr. Louis Fischer is the recipient of a four hundred dollar National Formulary grant to be used in the standardization of aromatic drugs. Dr. E. A. Kelly is the author of a new manual for qualitative chemistry. The title is "Qualitative Chemistry for Students of the Medical Sciences."

University of Michigan, College of Pharmacy.—Dr. Howard B. Lewis delivered the fifth of the 1940-41 series of lectures before the Harvey Society at the Academy of Medicine in New York City on February 20. His subject was "The Significance of the Sulfur-containing Amino Acids in Metabolism." He spoke at Newark, New Jersey on February 21 before the Northern New Jersey Branch of the American Pharmaceutical Association on "The Pharmacist and the Vitamins."—The annual pharmaceutical conference sponsored by the College of Pharmacy will be held on Tuesday, May 20, 1941. The guest speaker will be Dean E. R. Serles of the College of Pharmacy of the University of Illinois, who will speak on "The Problem of Vocational Guidance for High School Students and Others Entering Our Colleges of Pharmacy."—The College of Pharmacy is cooperating with the Extension Service of the University, the Michigan State Pharmaceutical Association, and the State Board of Control for Vocational Education in the establishment of courses for registered pharmacists under the George-Deen Act.—Mr. Arthur E. Crippen, an Ann Arbor pharmacist and alumnus of the College, has been selected as discussion leader and is now meeting classes in four Michigan cities.

The George Washington University, School of Pharmacy.—The Ladies Auxiliary of the District of Columbia Pharmaceutical Association has just made available to the School its annual gift of $100.00 for supplementing the Library fund.—Through the cooperation of the School of Pharmacy and the Board of Pharmacy of the District of Columbia, the Student Branch of the American Pharmaceutical Association is conducting a survey designed to obtain information pertinent to national defense in regard to professional activities and facilities of stores, which will afford a closer check on registered pharmacists in the District of Columbia. The Board also expects to use the information as a basis for the classification of stores. The students will go from store to store filling out the questionnaire prepared by the faculty, and the Board will compile the information and use it when they receive the completed questionnaires from the students.

Connecticut College of Pharmacy.—Dean Henry S. Johnson spoke before the student body of the East Haven High School on March 18, upon the subject, "Pharmacy as a Career." A series of special lectures is being given weekly as part of the required work in the junior and senior classes. Those who have given lectures to date are Arthur J. Rivard, state narcotic inspector; Dr. E. M. Bailey, chemist in charge at the Connecticut Agricultural Station; Dr. George Bolles, practicing dentist of Danbury; Charles W. Noyes, Chief Pharmacist at the New Haven Hospital; and Dr. Friend L. Mickle, Director of the Bureau of Laboratories of the Connecticut Department of Health.—The senior class in pharmacology attended a demonstration in bioassay at the Yale Medical School recently and the sophomore class of the Medical School attended a demonstration given in pharmacy by Profs. A. A. Maier and N. W. Fenney.

Fordham University, College of Pharmacy.—A centenary fund drive is on for the development of the whole university. The plan is to raise $1,570,000 for this purpose. An anonymous donor has contributed $210,000 and the graduates of all the schools have subscribed $67,341 to date.—Dr. Leonard Piccoli has planned a number of lectures supplementary to the course in pharmacology. The titles and lectures are: "Pharmacology of the Amino Acids" by Nathaniel Burman, of the Arlington Chemical Laboratories; "Some Newer Aspects of the Pharmacology of the Colloidal Aluminum Compounds" by Ambrose Hunsburger, Jr., of the John Wyeth Laboratories; and "Requirements of Antiseptics under the Pure Food and Drug Administration" by D. M. Copley, Norwich Pharmacal Laboratories.

University of Idaho, College of Pharmacy.—The legislature has appropriated $175,000 for a new pharmacy building. This was accomplished through the united effort of the Board of Regents of the University, the State Pharmacy Board, and the Idaho State Pharmaceutical Association.

Rutgers University, New Jersey College of Pharmacy.—Professor Ronald K. Brewer, instructor in accounting, has been called to camp at Maxwell Field, Alabama, where he is now a captain of Infantry.—Mr. Harold Moskowitz, assistant instructor in pharmacy, is now at Camp Dix, New Jersey.—Mrs. Theodore M. Edison, sister-in-law of the Governor of New Jersey and a graduate of the New Jersey College of Pharmacy, class of 1937, is conducting a course in first aid at the college in collaboration with Dr. William Nyiri, professor of experimental pathology and hygiene. Besides the class, many residents of Newark and vicinity are taking the course.—Prof. George C. Schicks is conducting a special lecture and laboratory course for registered pharmacists every Tuesday evening at the college. Thirty-three are in regular attendance. The course is designed to acquaint the pharmacists with new and improved laboratory technique.

Brooklyn College of Pharmacy.—Professor Leslie C. Jayne of the department of chemistry has been appointed secretary of the Board of Pharmacy of the State of New York and has moved to Albany.—The Alumni Association of the College and the Kings County Pharmaceutical Society are conducting a series of joint meetings discussing topics pertaining to the legal duties of the pharmacist as a pharmacist and a citizen.

University of Wisconsin, School of Pharmacy.—Most of the assistantships, fellowships, and scholarships at the disposal of the School of Pharmacy for the next academic year have been temporarily filled.—Through the Wisconsin Alumni Research Foundation, the department has been granted two additional research assistantships for 1941-42. Applications for those positions as yet unfilled are now being considered.

University of Nebraska, College of Pharmacy.—Dr. J. B. Burt has been elected chairman of the Nebraska Section of the American Chemical Society and Dr. F. S. Bukey has been elected a member of the Executive Committee.—Lucille M. Mills has been elected president of the Nebraska Chapter of Sigma Delta Epsilon, the national organization for graduate women in science.—Dr. Harald G. O. Holck, associate professor of pharmacology, has accepted an invitation to become regular

abstracter of Ugeskrift for Laeger, a weekly Danish medical journal, for Biological Abstracts.

The College of Science, West China Union University, Chengtu.—A news letter has been established by the college in order to provide a means of communication and the dissemination of news of the activities of the staff, the students, and the graduates. Copies will be sent to all graduates and friends.—Dr. E. N. Meuser, of the department of pharmacy has been appointed to the newly created position of vice-dean of the college of science.—Dr. Lin Dsao Chung, a graduate of Leeds University, England, is now in charge of the medicinal chemicals manufacturing laboratory and is teaching pharmaceutical chemistry in the college of pharmacy.—Dr. Meuser has received a generous gift from Rev. W. R. Morrison of Canada who was formerly connected with the Canadian mission at Szechwan. The money will be used to erect the smaller of the two buildings which are being planned for the department of pharmacy. The building will be completed by the end of the spring term.—Of the thirteen papers on research recently published by members of the staff, eight were contributed by the staff of the department of pharmacy.

On January 18, The Alumni Association of the University of Maryland celebrated the one hundred and thirty-fourth anniversary of the founding of the University. Since this is the centennial year of the School of Pharmacy, it was given prominence in the program as a part of the Anniversary program and Dean A. G. DuMez was the principal speaker. He gave a short history of the Alumni Association and spoke of the early history of the Maryland College of Pharmacy. Dr. T. E. Ragland, president of the Alumni Association was the general chairman in charge of the celebration.

Deans Kendig and Little represented the A. A. C. P. at the National Conference on Defense Committees held at Washington, February 6.

On March 4, Dean Ivor Griffith was elected president of the Philadelphia College of Pharmacy and Science, succeeding Dr. Wilmer Krusen who was given emeritus status.

On January 9, the School of Pharmacy of Duquesne University held a clinic on the campus for the pharmacists of the Western Pennsylvania region. The program consisted of a discussion of the sulfo compounds by S. R. Porter and R. R. Kreuer; Sex Hormones Concerned with the Menstrual Cycle by Elbert Voss, and Methods of Dispensing Capsule Prescriptions by Dr. C. H. Becker.

Lieut. Dale Everton, University of Nebraska 1937, of the U. S. Marine Corps has been transferred from Pensacola, Florida for service on the Fleet at San Diego, California.

Prof. George W. Hargreaves of the Alabama Polytechnic Institute has been appointed associate state toxicologist.—J. M. Rash, a senior pharmacy student, has been elected to Phi Kappa Phi, and B. F. Ashew, J. P. Dalton, Harold Michelson and J. H. Stacey have been elected to Rho Chi. The student branch of the A. Ph. A. is sponsoring the annual departmental banquet on April 25, with Mr. H. S. Noel of Eli Lilly and Company as the main speaker.

(Continued on page 263)

MISCELLANEOUS ITEMS OF INTEREST

Memorials

ELINOR LLOYD MARSH

The alumni and friends of the Creighton University, College of Pharmacy were grieved to learn of the death of Elinor Lloyd Marsh on December 28th, last. With the exception of an absence while he served our country during the World War, Fred E. Marsh, husband of Mrs. Marsh, has been affiliated with this institution since 1913, either as a student or teacher.

Mrs. Marsh, whose maiden name was Elinor Lloyd, was born in Omaha of parents who settled in this section of the country in the early days. While she will always be remembered more for her devotion to her husband, her family, and her friends, she nevertheless, found time to engage in many other activities. In her younger days she maintained an active interest in the Ladies Auxiliary of the Nebraska Pharmaceutical Association and the North Side Mothers Study Club, and the Girls Scouts and Camp Fire Girls. She was a member of Lambda Kappa Sigma in which she took an active part even when her health was failing. During recent years, and until her health failed completely, she was swimming instructor for girls in the University. Along with these activities she was a faithful member and regular attendant of the First Presbyterian Church of Omaha. She will be greatly missed by her many friends but most of all by her devoted husband and family of five children. By her deep devotion, guidance, inspiration and courage she has greatly enriched her family and friends.

William A. Jarrett.

CHARLES WALLIS EDMUNDS

On the afternoon of March 1, 1941, Dr. Charles Wallis Edmunds, Chairman of the Department of Materia Medica and Therapeutics of the Medical School of the University of Michigan, passed away suddenly at his home in Ann Arbor at the age of 68. He had delivered his usual polished and interesting lecture to the second year medical students the previous day and had spent the morning of March 1st at work in his laboratory.

Professor Edmunds, who was born in Bridport, Dorset, England, on February 22, 1873, came with his parents to the United States in 1883. His early education was obtained in Richmond, Indiana. After a year of college work at the University of Indiana, he entered the University of Michigan and received the degree of Doctor of Medicine in 1901.

The Medical School of the University of Michigan has been particularly fortunate in the men who have directed the work in phar-

macology. Although materia medica and therapeutics had been recognized since the establishment of the School in 1850, pharmacology in the modern sense may be said to date from the appointment to the staff of Dr. John J. Abel, who received his M. D. in 1888 at Strassburg and came to the University in January, 1891. When Abel was called to the Medical School of the Johns Hopkins University in 1893, Dean Victor C. Vaughan again appealed to Schmiedeberg of Strassburg and on his recommendation, Dr. Arthur R. Cushny, a young Scot, was appointed to succeed Abel. Cushny, who came to the University in the fall of 1893, was the most potent influence in interesting the young Edmunds, recently graduated in medicine, in the newly developing science of pharmacology. He became associated with Cushny in 1901, and as an instructor, was asked to take over the work in pharmacology when Cushny was called to University College, London, in 1905. In 1907, Dr. Edmunds was appointed to the chair of Materia Medica and Therapeutics, a position which he held until his death. Few universities can point to so distinguished a succession of pharmacologists as Abel, Cushny and Edmunds. Throughout his work Dr. Edmunds was conscious of the obligations of his "academic heredity", which he upheld so splendidly. It is characteristic of Dr. Edmunds that in a conversation with the writer only two days before his passing, he expressed the hope that the University would see fit to retain the title of "Department of Materia Medica and Therapeutics" with all its traditions at Michigan rather than change to the more usual title of "Department of Pharmacology."

Shortly before the return of Cushny to England, the laboratory course in pharmacology was made a required course for medical students. In the absence of satisfactory texts for laboratory use, it seemed wise to put in more permanent form the notes of the course developed by Cushny and Edmunds, and in the spring of 1905 the volume, "A Laboratory Guide in Experimental Pharmacology", was published, a volume whose usefulness has been demonstrated by frequent revisions and enlargements, the most recent revision by Dr. Edmunds having appeared in 1939. Cushny published his important text book on "Pharmacology and Therapeutics" (1899), which has become a standard work both for teaching and for reference. After the death of Cushny in 1926, the revision of this widely-used book was entrusted to Dr. Edmunds, the most illustrious of Cushny's pupils and associates in America, and to Dr. J. A. Gunn of the University of Oxford, who represented the pharmacologists of Great Britain.

During the year immediately following his appointment to succeed Cushny, Dr. Edmunds studied in Heidelberg under Gottlieb and Magnus, and in the summers of 1908, 1909, and 1910, was associated with the Hygienic Laboratory at Washington. There he became interested in the problems of the biological assay of digitalis and ergot. This led to the close collaboration of his laboratory at Ann Arbor with various national organizations, a collaboration which has continued up to the present. As a result of his interest in the problems of biological assay, Dr. Edmunds was asked to assume the chairmanship of a committee to make recommendations regarding the desirability of introducing such methods into the United States Pharmacopœia which was then undergoing revision (1910-1920). As a result of the advice of this committee, bio-

logical assays were introduced into the Ninth Revision of the United States Pharmacopœia, the first pharmacopœia in the world to make such methods of assay obligatory. This led to a continuing association with this group, which culminated in the election of Dr. Edmunds as President of the Pharmacopœial Convention in 1940. The participation in the work of revision of the United States Pharmacopœia, the Food and Drug Administration of the Department of Agriculture, the National Institute of Health, the Health Committee of the League of Nations and the Council on Pharmacy and Chemistry of the American Medical Association were important for the broad development of the interests of the Department at Michigan and in the training of the staff of younger men associated with Dr. Edmunds throughout a period of over 35 years.

Dr. Edmunds' services to the University extended beyond the development of pharmacology. He was Secretary of the Medical School from 1911 to 1921, Assistant Dean from 1918 to 1921, a member of the Executive Committee of the School from 1936 to 1939, and in 1937, was appointed for a term of five years to membership on the Executive Committee of the Horace H. Rackham School of Graduate Studies. He was a member of the Research Club of the University of Michigan and was honored by election to its presidency in 1926-27. He was selected by the Research Club as Henry Russell Lecturer in 1937, in recognition of his distinguished research in his chosen field. In this lecture he discussed his important contributions in "Experimental Studies on Diphtheria Toxin". He had been associated with the National Research Council since 1922 and was vice-chairman of its Medical Division in 1932-33.

Dr. Edmunds' interest in the national development of professional pharmacology is shown in his close association with the American Society for Pharmacology and Experimental Therapeutics of which he was president for 3 successive years (1921-1923), and with the Journal of Pharmacology and Experimental Therapeutics of whose Editorial Board he was a member for 30 years (1907-37)). His assistance during this formative period has been given full recognition by his colleagues.

For a period of almost 40 years, Dr. Edmunds devoted himself to teaching, research and assistance in the administrative work of the medical and graduate schools. His wise counsel in the work of the University will be sorely missed. In his contacts with students, he was kindly, yet never willing to condone superficiality. His lectures were presented clearly with the full knowledge of the historical background of his subject, with the authority of one who had "lived" pharmacology through the formative period of its history.

I have been associated with Dr. Edmunds as a colleague in the Medical School since 1922. During the difficult period of reorganization of the work in biological chemistry and in later years, Dr. Edmunds was always generous with his time, ready to offer friendly advice in the many problems involved. In more recent years in relation to the work of the College of Pharmacy, we have had frequent occasion to seek his advice. In these problems, as in those of medicine, he was cooperative, helpful, and genuinely interested in the full development of both educational and scientific pharmacy. He expected

of others, associates in pharmacology, colleagues and students, the same high standards of personal and professional integrity which he himself maintained throughout his life.

Dr. Edmunds was a lover of music. He enjoyed painting and spent many of his summer holidays in the art colony on Monhegan Island. His paintings of the Maine coast were regularly shown at the annual exhibition of the Ann Arbor Art Association. In spring, summer and fall he could be found working in his garden. The residents of Ann Arbor and the many students from the fraternities of his neighborhood had learned to look for the succession of hyacinths, English primroses, narcissuses and tulips, and later the Madonna and Regal lilies which heralded spring in his garden on the corner of Cambridge Road and Baldwin Avenue.

Dr. Edmunds was married on September 15, 1909, to Lillian Virginia Kaminski of Richmond, Indiana, who survives him. Their daughter, Ann, is continuing the family tradition of service to the University in her participation in the work of the office of the Dean of Women. The son, Charles Wallis, Jr., a graduate of Swarthmore College, is a student in the Law School of the University.

—Howard B. Lewis.

Graduate Assistantships, Scholarships and Internships Available for the Year 1941-42

Medical College of Virginia, Richmond.—The following internships will be available July 1, 1941:

1. Rotating internships in hospital pharmacy. The service includes the compounding of outpatient and hospital prescriptions, pharmaceutical manufacturing, the preparation of sterile solutions, stains, dyes, ampuls and other pharmaceutical work of a specialized nature. Compensation, $12.50 per month and maintenance.

2. Resident internship in hospital pharmacy. Prerequisite: one year's experience in hospital pharmacy. This service offers an opportunity for library research, individual investigation, and experience in student and intern instructing. Compensation, $50.00 per month and maintenance.

Medical, dental and pharmacy interns occupy the same dormitory. This affords an opportunity for exchange of ideas which proves mutually helpful. Applications should be made at once to Dr. L. E. Jarrett, Director of Hospitals.

University of Illinois, College of Pharmacy.—A hospital internship program was instituted February 1, 1941. The internships are based upon the theory that the applicant holds a Bachelor of Science degree, and is eligible for registration in the State of Illinois, either by examination or by reciprocity. The positions themselves constitute half-time employment with a yearly stipend of $600.00 and the privilege of doing full-time work in the Graduate School of the College of Medicine, leading to the Master of Science degree. Exemption of fees and tuition is available, provided the applicant is eligible to admission

to the Graduate School, which requires a 3.5 grade point average, plus a recommendation from the school that the candidate is interested in and capable of graduate study.

University of Florida, School of Pharmacy, Gainesville.—Two positions as part-time graduate assistants are available for the year 1941-42, one with a major in pharmacognosy and one with a major in pharmacology. These positions require about fifteen hours per week for the performance of departmental duties assigned, and the remaining time is to be devoted to graduate study. Salaries are $450.00 annually with remission of some fees, such as non-resident tuition. In order to qualify, candidates must have a B. S. in pharmacy from a recognized college of pharmacy and a scholastic average of approximately "B" or higher. Drug store experience, a certificate of registration as pharmacist, evidence of a good moral character, and success in positions previously held is also required. Apply at once to P. A. Foote, Director.

University of Kansas, School of Pharmacy.—Graduate assistantship, 1941-42, with half-time laboratory teaching duties. This assistantship carries a stipend of $500.00 for nine months which entitles the recipient to staff rates. These rates exempt from tuition, the student paying only $2.00 per credit hour. The assistant may pursue his graduate work leading to the degree of Master of Science, majoring in pharmacy or pharmacognosy and minoring in any of the related fields such as chemistry, bacteriology, botany, or zoology. The half-time laboratory teaching will be in the dispensing pharmacy laboratory.

State University of Iowa, College of Pharmacy.—Two graduate assistantships and one scholarship are offered. The first assistantship pays seventy-five dollar per month on a two-thirds time basis. The other pays fifty dollars per month on a half time basis. In the case of the former, the student has the responsibility of dispensing all materials used in the various pharmaceutical laboratories, checking stock supplies, and assisting in the laboratories when possible. This position has in the past been awarded to a registered pharmacist who wished to do work toward an advanced degree. The duty of the recipient of the second assistantship, who must be a registered pharmacist, is to assist in the hospital pharmacy of our University Hospitals. A one hundred dollar cash scholarship is offered annually by George Jay, Shenandoah, Iowa pharmacist, to the most deserving student in the third year class. The recipient is determined by vote of the faculty and the award made at the beginning of the senior year. Neither of the two assistantships carry an exemption of fees or tuition in the graduate college.

American Pharmaceutical Association, research fellowships.—The A. Ph. A. Committee on Pharmaceutical Research announces the availability of certain limited funds for the establishment of research fellowships for the year 1941-1942, and invite applications for these grants. The allowance in each case is usually from $300 to $400. These grants are to be made by the Council of the A. Ph. A. on the recommendations of the Committee. They are to be made on the following basis:

(a) the extent which the award will serve to promote pharmaceutical research

(b) whether the work supplements the A. Ph. A. laboratory program
(c) the qualifications of those who will perform the work for which the award is made and the facilities of the laboratory where the research will be conducted
(d) preference will be given to applications wherein the award will supplement a contribution from the institution or laboratory in which the research will be conducted.

Application blanks can be obtained from the chairman of the Committee on Pharmaceutical Research (Francis E. Bibbins, R. R. 16, Box 728-B, Indianapolis, Indiana). These blanks with all details necessary to evaluate the projects must be returned to the committee not later than May 15, 1941. Announcements of the awards will be made early this summer.

The Upjohn Research Fellowships.—Research fellowships from $1,800 to $5,000 are available in the basic medical sciences for terms of one year or more. Applications are invited from research workers in the following scientific fields: pharmacy, pharmaceutical chemistry, bacteriology, pharmacology, experimental medicine, physiological chemistry, nutrition and synthetic organic chemistry. University research fellowships are offered for the support of graduate students and others to assist them in further research study in college and university circles; also industrial research fellowships are offered in the research laboratories of The Upjohn Company, the application must, of course, have the approval of the necessary college or university authorities. Preference will naturally be given to more experienced applicants who have developed a definite interest and to those problems which are believed to be related more closely to this industry. This statement does not carry the implication that applications from workers in fundamental research are to be excluded. Where the worker pursues a fundamental scientific problem, the only requirement is that he shall publish his results from this laboratory. Where the work is technical, it will be required that any results having commercial application shall be first offered to The Upjohn Company. This company has had many interesting experiences with this form of organized research work. We believe there has been mutual satisfaction between the company and holders of these scholarships. Application blanks sent on request. Address "Director of Research. The Upjohn Company, Kalamazoo, Michigan."

University of Minnesota, College of Pharmacy.—Tentatively available for 1941-42. One graduate teaching assistantship in pharmacy. One graduate teaching assistantship in pharmaceutical chemistry. Remission of tuition. Stipend $450.00 for 9 months. Health service and Minnesota Union fees charged, totaling about $25.00 each year.

The George Washington University, School of Pharmacy.—Seven entering freshmen will be recipients of scholarships provided annually by Peoples Drug Stores, Inc. These scholarships include room, board, and tuition for the four years, amounting to about $2,500.00 each, and are awarded on the basis of preparatory school scholastic attainment and a competitive examination and the seven receiving the highest ratings are awarded the scholarships. Two student assistantships will be available to seniors for the 1940-41 term. These are awarded upon the basis of scholarship.

University of Buffalo, School of Pharmacy.—A fellowship carrying a stipend of five hundred dollars ($500) and remission of tuition. This graduate student will be expected to teach six hours weekly. He will be permitted to do graduate work in any field he chooses, assuming that it will have some direct relationship to pharmacy. He should be able to meet our requirements for the master's degree in two academic years.

A Report of the Organizational Meeting of the American Institute of the History of Pharmacy

A meeting was held at Madison, Wisconsin on April 2, for the purpose of perfecting the organization and to formulate and discuss plans that would be helpful in initiating and carrying on the work of the Institute. President A. H. Uhl gave a brief history of the organization of the Institute and stated its objectives. Dr. B. V. Christensen commented upon the necessity of making the work nation wide, if it is to accomplish the objectives its founders envisioned. The name American Institute of the History of Pharmacy was adopted as most appropriate indicating the scope of the field.

Mr. Jennings Murphy, Secretary-Treasurer made a statement relative to the financial support of the Institute. He reported that the Wisconsin pharmacists are definitely back of the Institute and will support it financially until the time comes when its wide field of action will bring to it a more generous support from all parts of the country.

The Constitution was read by the Director and minor changes were suggested and adopted which would facilitate the functioning of the Institute.

The business meeting was followed by a visit to the History of Pharmacy exhibit. This exhibit had been arranged by Dr. George Urdang in a room in the Library building. The display covered the walls, and filled racks and cases around the room. It was not only interesting but instructive and at a future date we hope to describe it in detail in these pages because of its educational value.

The day's program was followed by a banquet in the evening at which President C. H. Dykstra was to speak but was detained in Washington at the last moment because of his dutes as head of the strike mediation committee. Talks were given by Dean G. C. Sellery of the College of Letters and Science; Dean U. S. Middleton of the Medical School; Dr. R. L. Reynolds, Professor of History; Dr. Edward Kremers all of the University of Wisconsin, and by Dean R. A. Lyman of the College of Pharmacy of the University of Nebraska. Many worth while things were said which we hope to record in future issues. This brief report is closed with Dr. Urdang's own words,—"A day full of harmonious work and understanding has come to a close. Harmonious was its start. Harmony is its aim. The ship's sails are set and waiting for the wind favorable for the journey."

Rufus A. Lyman.

American Pharmaceutical Association Takes Over the Hugh Mercer Apothecary Shop

On February 28th the Hugh Mercer Apothecary Shop, at Fredericksburg, was deeded to the Friends of Historical Pharmacy, Inc., in a simple ceremony held in the little office where George Washington once kept his desk. Formal presentation was made by Judge Alvin T. Embrey who represented the Citizens' Guild, owners of the building since 1926, and the deed accepted by Dean W. F. Rudd.

This new association has been formed to take over and care for the property for the American Pharmaceutical Association. Plans call for the installation of a new heating plant, repainting interior and exterior of building, and further landscaping the grounds. Dedication has been set for April 30, at which time many pharmacists will be present along with officials of the organization.

Preceding the ceremonies dinner was served the officials and attended by a number of prominent Frederickburg people.

The new officers are: W. F. Rudd, president; Dr. R. A. Deno of Rutgers University College of Pharmacy, vice president: and Dr. E. F. Kelly of Washington, secretary and treasurer. The Board of Managers of the previously named officers, are Mr. R. W. Rodman of Washington, Roger Clarke and Charles H. Lewis of Fredericksburg.—From the Virginia Pharmacist.

The Practicing Drug Store of the University of Oklahoma

The School of Pharmacy is unique in its operation of a practice drug store. Complete in every detail, the store is open from eight to five on school days throughout the academic year.

The store, originally installed in the pharmacy building in 1928, waited upon the installation of a fountain in 1940 for its present cooperative operation. By cooperative operation is meant that pharmacy students are permited to be customers. Thus every sale and every purchase is an experience for two pharmacy students. Because the student operators are employed under the NYA program, penny prices can be and are charged for items. Full prices, of course, could be asked but it was felt that would reduce the volume which would lessen the amount of experience possible and by so doing would defeat the purpose of the store.

Operation at present is limited largely to the fountain, the luncheonette, and related items although all departments are supplied with dummy or real merchandise. The prescription and the first aid departments are stocked with real merchandise.

The store fits into the educational program of the school in three ways. First, it provides experience for the students throughout the year. Second, it is used as a clinic during the drug merchandising short

courses. The specialists on any one day's program, can demonstrate concretely the points they have brought out in their talks. Third, it serves as a laboratory for the students enrolled in the course in merchandising. In this course, each student belongs to a merchandising campaign group, corresponding roughly to the personnel of a drug store. Each group is composed of a manager, an assistant manager, a copy writer, sales sentence writers, and radio announcement writers. Each practice merchandising campaign is planned, at least two weeks in advance, by the manager who assigns individual duties. The complete campaign involves a window display, an interior display, advertising copy, radio announcements, show cards, window lettering, and a photograph of the window. The following week, the assistant manager becomes manager, and everyone takes a step up except the manager who steps down to start in again at the bottom of the personnel list.

The store has its own bank account, printed checks, letter heads, statements, and all the accessories that belong to a store.

The staff of the School of Pharmacy feels that its practice drug store is adding definitely to its educational program, both adult and collegiate, in providing experience of a business and human relationship character not generally available in books.

Ralph Bienfang.

The Pharmacist, the Pharmacy Student, and the Draft

Deferrment, placement in pharmaceutical work, and the possibilities for commissions depend upon the individual involved. Much confusion still exists in the minds of pharmacists concerning their status with respect to conscription under the Selective Training and Service Act of 1940 and many conflicting reports and rumors dealing with the situation are being heard and read. It is well to take stock of our present knowledge and attempt to clarify the thinking of pharmacists in as authoritative a manner as possible.

To give a direct reply to the questions which we are being asked daily by telephone, by mail, and by wire, the following catechism has been prepared. It represents the best information at our command at the present writing.

Are pharmacists automatically deferred from training and service because they are members of a profession that is "necessary to the maintenance of health, safety, and interest"?

No. There is no blanket deferment for any group, class, or profession. Deferment is based upon *individual* conditions. Although the profession of pharmacy is certainly "necessary to the maintenance of health, safety, and interest," deferment of an individual pharmacist by a local draft board depends upon whether or not he is a necessary man in the particular community whose removal would represent such a material loss that the pharmaceutical services available in the general neighborhood would be inadequate as a result. It would have to be

proved that he could not be replaced satisfactorily because of a shortage of persons with his qualifications or skill.

Are proprietors of "one-man stores" classed as necessary men and therefore deferred?

Not necessarily. If such a man could not be replaced or if his removal would cause a material loss in the pharmaceutical services available in the community, he might be deferred by his local draft board but merely the fact that he conducts a "one-man" store does not assure deferment.

Will a pharmacist who is drafted be placed in a position where he will perform pharmaceutical duties?

He may, and he may not. The Army will do its best to place draftees, after they have had the required military training, in departments of the service where they will perform duties for which they are best equipped by civilian training and experience. It must be remembered, however, that this is an army of fighting men, not an army of specialists. If every draftee who was trained to do a particular job were placed in a position in the Army where he did nothing but that work, there would be few men left who, untrained for anything else, carried a gun and did the fighting.

What will decide whether or not a pharmacist will be placed in a position where he performs pharmaceutical duties?

The decision will be based on (1) the need of the Army at that time for pharmaceutically trained men, and (2) the qualifications of the individual draftee. Bear in mind that there are pharmacists within the draft age limit who have had two, three, and four years of college and who, thus, have different qualifications.

Every pharmacist, in completing his records when inducted, should set out specifically his training and experience as a pharmacist and request to be transferred to the Medical Department for service as a pharmacist.

What rank does the pharmacist receive if he is placed in a position where he performs pharmaceutical duties?

Such men will be given the rating of technical sergeant with pay of $84 a month and sustenance after they have received their basic training.

Are pharmacists who are drafted eligible for commission in the Medical Administrative Corps?

Yes, if they have the proper qualifications of education, ability, character, are capable of assuming leadership, and meet the other requirements of "officer material." It is presumed that only those who have had four years of college study will be considered eligible from the educational viewpoint and not all of these will be able to meet the other requirements of an Army officer.

It is contemplated that a block of commissions in the Medical Administrative Corps Reserve will be set aside for suitably qualified pharmacists for duties particularly in large stations and general hospitals. Instructions to this effect will shortly be issued to the Corps Area Headquarters.

How does a pharmacist apply for a commission in the Medical Administrative Corps Reserve?

Those educationally and otherwise qualified and already in the service as draftees should apply to their military commander.

Those not in the service should apply to their Corps Area Headquarters for commissions in the Medical Administrative Corps Reserve. If commissioned they may be called for duty at once or may be left on the inactive list until a later date.

What is meant by "Red Cross Enrollment"?

Early last year the American Red Cross invited pharmacists to enroll voluntarily with its organization as "pharmacy technicians." Those who enrolled were investigated and to date, 775 have been accepted. This enrollment was carried on at the request of the Surgeon General of the Army and he has asked military authorities to classify for duty in the Medical Department all Red Cross enrollees who are drafted for a year of military service.

Each enrollee has an identification card which he presents at the time he is conscripted. This enrollment will facilitate his being assigned to pharmaceutical duties as promptly as possible.

Is enrollment in the Red Cross still open?

Yes, applicants should write to the American Red Cross, Washington, D. C., for the necessary forms to enroll as pharmacy technicians.

Are pharmacy students exempt?

The Selective Training and Service Law provided that full-time students of colleges and universities may be deferred, on their request, until the completion of their academic year but not longer than until July 1, 1941. Information will be given later about the status of pharmacy students after July 1, 1941.

* * *

May I repeat, in conclusion, that the entire program of Selective Training and Service is built on a consideration of the individual circumstances concerning each draftee. No group, class, or profession receives a blanket consideration. Pharmacists as a class are not exempt, or deferred. Pharmacists, as a class, are not assured of commissions. Pharmacists, as a class, are not even assured that they will be placed in positions where they will perform pharmaceutical duties. It is the individual, his civilian circumstances, and both his educational and general qualifications, as well as the requirements of the Army, which must be considered.

Committee on the Status of Pharmacists in Government Service,
H. Evert Kendig, Chairman.

Plant Science Seminar to Meet at Cranbrook

The nineteenth annual Plant Science Seminar will be held at the Cranbrook Institute of Science during the week of August 11-15, 1941. Cranbrook is an educational center occupying 300 acres of wooded land in Bloomfield Hills, Michigan, about 20 miles north of Detroit. Its Institute of Science was established as an aid to the diffusion of scientific knowledge and as an instrument of research and discovery. The Institute of Science occupies an impressive building opened in 1938,

where there is provided exhibition space and well-equipped laboratories, a library and an auditorium. Housed in the building is the largest natural historical museum in greater Detroit. Local natural history is emphasized and the museum is rapidly becoming the mecca for students and scientists of southeastern Michigan.

The region about Bloomfield Hills abounds in variable flora and many distinct plant communities are to be found. A number of excellent botanical excursions through this typically glaciated country are scheduled. Visits will be made to the Medicinal Plant Farm at Parkedale and to the Oakview Seed Breeding Institute of the Ferry-Morse Company and a visit to the Todd Mint Farms near Kalamazoo is being planned tentatively. Some of the country's leading pharmaceutical botanists and pharmacognosists will appear as speakers on the program and their subjects will be announced in the near future. Mr. J. Russell Anderson, 15851 Evanston Avenue, Detroit, is local secretary.

The Pharmaceutical Syllabus X.

Upon the recommendation of a special subcommittee, the Syllabus Committee has approved the following minimum hours for the list of required subjects which was previously approved by the committee as well as the American Council on Pharmaceutical Education (see this Journal 4, 455-9, 1940). These hours are, of course, subject to the approval of this Council.

The Syllabus Committee welcomes comments on this listing of minimum hours.

	Didactic	Laboratory	Total
Pharmaceutical Calculations	32	—	32
Pharmaceutical Latin	32	—	32
Dispensing Pharmacy	64	128	192
Fundamental Principles and Processes of Pharmacy	32	48	80
Pharmaceutical Preparations	96	160	256
History, Literature and Ethics of Pharmacy	48	—	48
Pharmaceutical Jurisprudence	32	—	32
Advanced Pharmacy I	32	48	80
Advanced Pharmacy II	32	48	80
		Total	832
Bacteriology	32	96	128
Botany	32	64	96
Pharmacognosy	96	64	160
Physiology	32	64	96
Zoology	32	64	96
Pharmacology	96	48	144
Bioassay	16	—	16
Public Health and Hygiene	32	—	32
		Total	768

Gen. Chemistry and Inorganic Pharmaceutical Chemistry	96	96	192
Organic Chemistry and Organic Pharmaceutical Chemistry	128	96	224
Qualitative Chemistry and Qualitative Pharmaceutical Chemistry	32	96	128
Quantitative Chemistry and Quantitative Pharmaceutical Chemistry	64	96	160
		Total	701
English	96	—	96

Henry M. Burlage, Chairman.

New Books

THE MACHINERY OF THE BODY by Anton J. Carlson, M.D., and Victor Johnson, M.D., University of Chicago. Second, revised and enlarged edition. 1941. 620 pages. 213 illustrations; 15 tables. University of Chicago Press. Price $4.00.

When the sales of a new text-book in college physiology during its first three years average nearly six thousand new copies yearly, there can be no doubt that the book must have had many features appealing to teachers all over the country. In the second, revised and enlarged edition the authors have carefully corrected minor errors and made changes and additions to present the material with even greater clarity and to bring it up to date; a number of excellent illustrations from the sound films that have been made to accompany this text have also been added, notably in the chapters dealing with digestion and nutrition. Entirely new sections have been written dealing very concisely with alcohol and tobacco; but although alcohol serves only a "very limited function in medicine," it certainly is very important as a medical solvent. At the end is now to be found a new chapter dealing with the physiology of reproductoin and early development. Consequently, the new edition contains forty pages more than the first. Also, the additional matters are presented as interestingly and clearly as the older chapters, and their inclusion will make the book of greater value to teachers of public health and sex-hygiene. This book, in the opinion of the reviewer, is the one best suited to the needs of physiology courses in the pharmacy colleges.

H. G. O. H.

THE PHARMACOLOGICAL BASIS OF THERAPEUTICS by Louis Goodman, M.A., M.D., Assistant Professor of Pharmacology and Toxicology, and Alfred Gilman, Ph.D., Assistant Professors of Pharmacology and Toxicology, Yale University, School of Medicine. 1941. 1383 pages. 126 illustrations; 67 tables. The MacMillan Company, New York. Price $12.50.

Although this pharmacology is written primarily for medical students and physicians, its appearance should be welcomed by all teachers

in this and associated fields. There are many reasons for this. In the first place, the book is beautifully printed, clearly illustrated, well written and very comprehensive; it includes practically all the newest remedies of any importance; thus a hundred pages are devoted to sulfanilamide, sulfapyridine and sulfathiazole, covering a field in which it is very difficult to keep up with the advance of knowledge. Secondly, pharmacology courses in pharmacy colleges usually are limited in hours; hence the definite stands of the authors in regard to importance and clinical value of drugs is helpful in choosing what to include or stress. In the third place, a large number of 1939 and 1940 references, as well as reviews—mainly to literature in the English language—provide the reader with a quick means of further enlightening himself in any field desired. Finally, throughout the book special discussions are included, summarizing in a critical manner the history and the underlying principles of the actions of the group or drug in question, as in the case of anesthetics, acetyl-choline and other autonomic drugs, vitamins and sulfanilamide compounds. Nineteen pages are given to prescription writing which includes numerous well chosen sample prescriptions and stresses the desirability to write prescriptions in English and in the metric system. In view of the general excellence of this text, the following comments are of purely minor nature. In some cases only one bioassay method is given, though, as an illustration, Burn has advocated the uterine weight method in preference to the vaginal smear technique given alone in this book for estrone. In view of the widespread use of combined epinephrine and procaine in oral surgery, the finding by Luckhardt that epinephrine, with the accompanying procaine, is rather easily absorbed from various locations of injection in the mouth may be worth while to note. In the chapter on local anesthetics, pontocaine of the N. N. R. is omitted, but may deserve a mention. All in all, this book is one to which the reviewer will turn often to become better acquainted with the therapeutic value of many drugs; it seems to him to be a "must" book for every teacher in pharmacology and every pharmacy college library.

H. G. O. H.

SIMPLE EXPERIMENTS ON PHYSICO-CHEMICAL PRINCIPLES by M. L. Schroff and G. P. Srivastava, the Indian Pharmaceutical Association, Benares Hindu University, 1940. 292 pages, 36 illustrations. Price 8s. 6d.

This is essentially a laboratory manual containing a series of experiments in physical chemistry designed for the use of students of pharmacy, medicine and the biological sciences. As indicated by the authors in the preface, an attempt has been made to simplify in so far as possible the theoretical discussions in order that they may be readily understood by students lacking training in college mathematics. Twenty-one general experiments are given in the book, some of which are subdivided into a series of related determinations. Each heading is provided with an explanation of the theories involved and this is followed by detailed directions for the procedure to be carried out. Data sheets are provided for reporting the results obtained. Among the general topics listed are the following: molecular weight determinations by the vapor density and freezing point methods; the

distillation of binary mixtures; viscosity; surface tension and interfacial tension; refractive index; polarimetry; colorimetry, nephelometry; spectroscopy; distribution coefficient; the determination of pH of solutions by the indicator and electrometric methods; the solubility of solids in liquids; adsorption; colloids; electro-chemical measurements and electro-analysis, *etc.* Directions for setting up a thermostat, eleven tables of data on physical properties, and a brief bibliography are included as appendices. Although the theoretical discussions are less detailed than those found in some of the better known laboratory outlines for experimental physical chemistry, they are, for the most part, adequate and rather easily followed. This book might be suitable for use where only a limited amount of time is available for a laboratory course in physical chemistry. It is provided with an index which permits ready reference to any desired topic.

J. B. B.

MOSQUITO CONTROL by William Brodbeck Herms, Sc.D., and Harold Farnsworth Gray, Gr. P.H. 1940. 317 pages. 60 illustrations. The Commonwealth Fund, New York. Price $3.50.

The book deals with the history of mosquito control, the entomology of the disease carrying mosquito, the economics of control, and the cost of mosquito carried diseases, the laws and agencies of mosquito abatement, the methods of finding mosquito breeding places, the general principles of abatement methods, the engineering problems involved in the destruction of breeding places, the use of oil and larvicides and the propagation of fish as a supplementary method of control. A discussion of the special features of mosquito control under many different local conditions both urban and rural makes the book especially practical to those assigned the task of mosquito eradication. The bibliography at the end of each chapter and an appendix is excellent. The appendix also gives in tabular form the principal malaria transmitting anophelines of the world and their typical breeding places and the regions where they are the important vectors. This book should be in every pharmacy library in institutions where public health courses of any character are given.

LEE ON THE LEVEE by Ralph Cannon. First edition, 1940. 188 pages. Saravan House, New York. Price $2.50.

An historical novel which has as its subject the monumental work of Lieutenant Robert E. Lee as a hydraulic engineer in the eighteen-thirties threw back the current of the mighty Mississippi against the west bank where it surged by St. Louis and be so doing saved a harbor to that pioneer river town, which made it the metropolis of the middle west. The author's inspiration for writing the book was Dr. A. B. Luckhardt, who as the foremost collector of historical facts about Dr. William Beaumont the illustrious physician who made the pioneer studies on gastric digestion, pointed out the intimate friendship between Lieutenant Lee and Doctor Beaumont. While the author

made the former the hero of the novel, there are times when Dr. Beaumont and his family almost stole the show. Any author, who in his book gives us a better picture of the life and work of a great character in medical history, should have a place in the training of the pharmacy student.—Lee on the Levee does that.

R. A. L.

Harofé Haivri (The Hebrew Medical Journal) 1940, vol. I, New York, Pp. LXII. 192.*

This journal, the title of which means literally "The Hebrew Physician", is published semi-annually by a committee which consists largely of American physicians. It is based on the assumption that Hebrew has become an effective means of communication among the Jews of the world, and that the intellectual center of Jewish life is in Palestine where Hebrew has become the language of daily use. According to the editor of the journal, Dr. M. Einhorn, the percentage of Jewish physicians possessing the knowledge of modern Hebrew is very high. In order to make the journal accessible to those who do not know Hebrew, some of the articles are reproduced in English, in the form of extensive summaries; in the present issue (which is an "anniversary" issue, celebrating the Jewish coming of age of the Journal—its thirteenth anniversary) two articles on Sigmund Freud (the whole issue is dedicated to him), biographies of some prominent Jewish physicians, A. Wassermann among them, an article on polyneuritis, as well as the introductory article by the editor, explaining the achievements and the aims of the journal, are summarized in English. The perusal of these excellent summaries is somewhat compilcated by the printing of the numerous annotations not in connection with the English text, but in the Hebrew section of the journal. The Pharmaceutical News are given only in English. The articles on the organization of the Health service in Palestine, on the new scientific terminology in Hebrew, constantly developed because of the demands of modern science, book-reviews and the article by Dr. L. Golden about the treatise on dietetics, "The Hygiene of the Body", by the famous Hebrew poet Jehuda Harizi (or Alharizi) who lived in Spain in the 13th century, are only in Hebrew; many readers will miss their summaries in English.

Michael Ginsburg.

RETAILING BY PHARMACISTS, by A. Hamilton Chute, Ph.D., Assistant Professor of Marketing, School of Business Administration, and Lecturer for the College of Pharmacy, University of Minnesota. First Edition. 1941. 333 pages. Mimeoprint with photo-offset illustrations,

*This journal is published in Hebrew and English in the approximate proportion of 3 to 1. Dr. Michael Ginsburg of the Department of Classics of the University of Nebraska, at our request, kindly translated the Hebrew section in order that our readers might appreciate the nature of its contents.—Ed.

with imitation leather cover and layflat binding. Burgess Publishing Company, Minneapolis. Price $3.50.*

In the foreword it is stated that the book has been written primarily to meet the long-felt need for a general text of this character for pharmacy students, and secondarily to provide a handbook for the use of retail pharmacists who are interested in reviewing or improving their knowledge of merchandising methods.

The first two chapters deal with the operations of the pharmacist in general marketing activities and with his position among competitive types of retail enterprises. The remaining eleven chapters deal with the primary interests of the retail pharmacist, such as locating, organizing and financing a drug store; drug store layout, equipment and lighting; purchasing for the drug store; pricing and minimum resale price maintenance; sales planning and sales promotion; display and advertising; promotional opportunity in the prescription department; selling, services and personnel; costs, expenses and records in the drug store.

The material for the book has been gathered from many sources, including the usual governmental statistics and publications, reports of special studies made by universities and trade associations, articles from drug trade journals and textbooks dealing with problems in marketing. The book includes three figures illustrating floor plans, fifteen plates showing modernization of store fronts, interiors, prescription departments, fountains, etc. These illustrations are ideal and portray the "better than average" drug store. The book is replete with references to the sources of material for the text, illustrations and plates. There is some repetition and redundancy in the compilation of the text, but this may be an advantage rather than a detriment to the average student.

The last chapter, "Government Regulation and Public Relations" includes part of the material generally presented as pharmaceutical law in many schools of pharmacy and is incomplete if intended to cover the subject.

In this reviewer's opinion the author has succeeded in preparing from the mass of available material an interesting text, in which he describes or surveys, and to some extent analyzes, the marketing policies and methods of retail pharmacists. The use of this text will greatly reduce the work of both teacher and student in garnering and appropriating the material from the original sources. The book also furnishes these important facts, policies, methods, etc., for easy implementation and adoption by the pharmacist in his daily retail practices. An outstanding feature of the book is the author's comprehensive and thorough review of published data bearing on the subject of retailing by pharmacists.

B. Olive Cole.

RETAILING BY PHARMACISTS is a much needed contribution to pharmacy. If students could enter their first business endeavor with

*It was requested by the author to have this book reviewed by two parties, one to be a teacher of commercial pharmacy and the other an outstanding retail druggist. Prof. B. Olive Cole of the University of Maryland and Mr. Keith K. Keller of Minneapolis complied with the request for which we are appreciative.—Ed.

the knowledge presented in this book, pharmacist's income would be increased the country over, whether from salary or from income from their own business. Also there would be fewer retail drug store failures.

The information contained in Chapter III—"Organizing, Locating and Financing a Drug Store"—is seldom given due consideration prior to one's first retail business enterprise. One of the most helpful subjects in the book lies in the problems discussed in Chapter IV—"Drug Store Layout, Equipment and Lighting", which information should be made available to every merchandiser in the country. Chapter VII on pricing should prove valuable to the merchant with limited funds as well as to the one who wishes to get the greatest returns from his investment.

In Chapters VIII and IX are set forth in a very complete manner the many ways to get sales volume in a retail store. It is true that location, competitive situations, etc., must be considered in merchandising today. Therefore, it is well for pharmacists to have the knowledge of the many methods for the promotion of sales. Chapter X deals with the backbone of pharmacy—the prescription department. Since pharmacy is the students' choice of professions their knowledge of its promotion should be most complete.

The contents of Chapter XI—"Selling, Services and Personnel"—should make students cognizant of the fact that selling and salesmanship in business contribute a profession in themselves and should be emphasized.

In the Chapter (XII) on Costs, Expenses and Records, the author is to be complimented on the emphasis he has placed upon the necessity for the departmentalization of a drug store and upon the need for maintaining records of costs, profits and other information which the individual himself can keep and understand and can use in guiding a business to success.

A course such as that set forth in this book should be included in the curriculum of a School of Pharmacy in order that students may be better fitted to take over their duties on graduation. The author should take considerable satisfaction from having made this contribution to our profession.—Keith K. Keller.

THE MASK OF SANITY by Hervey Cleckley, B.S., B.A. (OXON.), M.D., Professor of Neuropsychiatry, University of Georgia School of Medicine, Augusta, Georgia. 1941. 298 pages. The C. V. Mosby Company. Price $3.00.

The author suggests that a definite proportion of persons that are familiar as social problems in every community, be classified as a special kind of psychosis, which he designates semantic dementia. He gives a detailed description of its characteristics; ten typical case histories; and its differential diagnosis from all accepted types of constitutional psychopathic personalities of which it is at present a form. He says the present history of these people is that as community nuisances, they are repeatedly committed to jail, sent to a psychopathic hospital on the plea of insanity, then released because no psychosis is found. He recommends that they be diagnosed as a special group, studied for special methods of therapy and permanently institutionalized

if by treatment, improvement cannot be expected. It is a book which will be very useful to general practitioners and laymen who handle such cases, if and when, the psychiatric specialty accepts the syndrome.—R. A. W.

DETAILING THE PHYSICIAN by Tom Jones. 1940. 214 pages. Romaine Pierson Publishers, Inc. Price, $2.75.

No one is better qualified by long experience and training to write on this subject than the author. One cannot read the book without having cultivated within himself a higher regard for the detail man and the profession of detailing. The chapters deal with every phase of the work of the detail man and the author has especially stressed the ethical nature of his work. The high ethical character of the book cannot be summed up in a better language than the lines which the author has placed at the end of the Detail Man's Creed—

"I will always remember that on each day
I must do my bit in an honest way.
I will plan my work and work my plan
So as to gain respect for the Detail Man."

Since reading the book the reviewer has asked a number of high class physicians in his home town for their attitude toward the detail man. The answers can be summed up in these lines. "I look forward to it. These men are usually high class men and pharmaceutically well trained. They are trained in a field where I am weak. They bring me information sooner than I can get it in the medical journals. I have found their information reliable at the present stage of knowledge. He comes at a time which does not interfere with my professional work. I should not want the detail man to pass me by." The book has a final chapter written by Dr. Frank B. Kirby of the Abbott Laboratories on "Time Finding for Detailing" written for the benefit of the retail druggist. The book should be read and studied by every one in the drug industry and every student entering pharmacy as a vocation.

R. A. L.

NOTES AND NEWS

(Continued from page 244)

New members of Phi Chapter of Rho Chi at the University of Illinois are Ernie J. Ernest, Daniel A. Holland, Lester Jacobs, Norman B. Levit, Charles H. Matteo, Harry L. Sander, Peter B. Segal, Richard O. Vycital, Donald J. Weis, and Mary M. Wieczorck. Initiation services were held on March 31, at which Dean E. R. Serles spoke on the relation of Rho Chi to the profession of pharmacy, and Dr. E. H. Wirth exhibited films taken at recent meetings of the Plant Science Seminar and the American Pharmaceutical Association.

Governor Charles Edison awarded certificates of registration to thirty newly registered pharmacists in the Assembly Chamber of the State House at Trenton, New Jersey on April 10. This was the twentieth occasion on which the Board of Pharmacy has publicly awarded these certificates and the first group of pharmacists to whom Governor Edison has personally awarded certificates of registration. The principal speaker on this occasion was Dr. L. M. Kantner, Secretary of the Maryland Board of Pharmacy and Deputy Food and Drug Commissioner of the State of Maryland. In addressing the new registrants,

Dr. Kantner gave it as his conviction that "There never was a better opportunity to practice professional pharmacy than at the present time. There are untold opportunities to build what may be termed professional success that are being overlooked, to a great extent, by far too many pharmacists. Pharmacists are educationally equipped to promote ethical, professional preparations that reflect credit upon the institution from which they emanated and supply a public need. Merely to be professionally minded is not going to supply the pharmacist's life requirements. It is not going to attract a clientele to simply state that pharmacists are properly educated. They must exercise their talents and ability in serving the public if they are to be economically successful." Dr. Kantner strongly advocated that the newly registered pharmacists do not embark upon a business career for themselves at once but that they obtain additional practical experience under competent pharmacists before attempting to organize their own pharmacy. The various chapters of the Code of Ethics of the American Pharmaceutical Association were read to the registrants by members of the Board and signing of the Code by the newly registered pharmacists followed. The speaker was introduced by Mr. Percy H. Jackson, Vice-President of the Board and the Governor was introduced by Mr. Charles Schamach of Paterson, the President of the Board, who also presided over the exercises. The provisions of the Pharmacy Law as they affect newly registered pharmacists were outlined briefly by Robert P. Fischelis, the Secretary of the Board.

Delta Chapter of Rho Chi at the State University of Iowa elected eight students to membership. They are Irwin J. Lage, Dwight L. Mase, Robert L. Van Horne, Delpha L. Donner, A. James Farnham, Elizabeth N. Holmes, Lyle C. Searle, and George T. Weirick. Mr. Lage and Mr. Searle were winners of the $20 prize in 1938 and 1939 respectively. This prize is given by Delta Chapter at the close of the first year to the student who has attained the highest scholastic average. Professor L. C. Zopf was elected to full membership in Sigma Xi as was Dwight L. Deardorff, a former student who continued the work toward the doctorate degree with a major in chemistry. Willis P. Blackwell, who formerly assisted in the hospital pharmacy of the University, has been replaced by Harry W. Austin of the 1940 graduating class. Mr. Blackwell received the degree Master of Science in pharmacy in February. Mr. Austin will devote half-time work toward the same degree. The hospital pharmacy has been remodeled during the current year to conserve space and provide better dispensing and teaching facilities. Rapid progress is also being made in the extension of the drug garden to provide adequate space for both undergraduate and graduate studies of plants.

A medicinal plant garden is the newest project of the Massachusetts College of Pharmacy. Dean Howard C. Newton has announced that arrangements have been made to establish this garden on the grounds of the Bussey Institution of Harvard University at Jamaica Plain, adjoining the Arnold Arboretum. The use of this most desirable location is made possible through the cooperation of Dr. E. D. Merrill, Administrator of Botanical Collections of Harvard University. Dr. Heber W. Youngken and Dr. Maynard W. Quimby are in charge of the development of the garden.

INSTITUTIONS HOLDING MEMBERSHIP IN THE ASSOCIATION

NEW YORK

University of Buffalo, School of Pharmacy, Buffalo: A. B. Lemon, Dean (1889).

Columbia University, College of Pharmacy of the City of New York, New York: Charles W. Ballard, Dean (1889).

Fordham University, College of Pharmacy, New York: James H. Kidder, Dean (1929).

Long Island University, Brooklyn College of Pharmacy, Brooklyn: Rufus A. Schneider, Dean (1926).

NORTH CAROLINA

University of North Carolina, School of Pharmacy, Chapel Hill: J. Grover Beard, Dean (1917).

NORTH DAKOTA

North Dakota Agricultural College, School of Pharmacy, Fargo: William P. Sprague, Dean, (1922).

OHIO

Ohio Northern University, College of Pharmacy, Ada: Rudolph H. Bloom, Dean (1925).

Ohio State University, College of Pharmacy, Columbus: B. V. Christensen, Dean (1900).

Western Reserve University, School of Pharmacy, Cleveland: Edward H. Hess, Acting Dean (1902).

OKLAHOMA

University of Oklahoma, School of Pharmacy, Norman: David B. R. Johnson, Dean (1908).

OREGON

Oregon State College, School of Pharmacy, Corvallis: Adolph Ziefle, Dean (1916).

North Pacific College of Oregon, School of Pharmacy, Portland: Antonia C. Blackburn, Dean (1914).

PENNSYLVANIA

Duquesne University, School of Pharmacy, Pittsburgh: Hugh C. Muldoon, Dean (1927).

Philadelphia College of Pharmacy and Science, Philadelphia: Ivor Griffith, Dean (1900).

Temple University, School of Pharmacy, Philadelphia: H. Evert Kendig, Dean (1923).

University of Pittsburgh, Pittsburgh College of Pharmacy, Pittsburgh: C. Leonard O'Connell, Dean (1906).

PHILIPPINES

University of the Philippines, College of Pharmacy, Manila: Mariano V. Del Rosario, Dean (1919).

PUERTO RICO

University of Puerto Rico, College of Pharmacy, Rio Piedras: Luis Torres-Sanz, Dean (1926).

RHODE ISLAND

Rhode Island College of Pharmacy and Allied Sciences, Providence: W. Henry Rivard, Dean (1926).

SOUTH CAROLINA

Medical College of the State of South Carolina, Charleston: Robert Wilson, Dean; School of Pharmacy, Washington M. Lebkicher, Director (1920).

University of South Carolina, School of Pharmacy, Columbia: Emory T. Motley, Dean (1918).

SOUTH DAKOTA

South Dakota State College, Division of Pharmacy, Brookings: Floyd J. Lollman, Acting Dean (1908).

TENNESSEE

University of Tennessee, School of Pharmacy, Memphis: Robert L. Crowe, Dean (1914)

TEXAS

University of Texas, College of Pharmacy, Austin: William P. Gidley, Dean (1926).

VIRGINIA

Medical College of Virginia, School of Pharmacy, Richmond: Wortley F. Rudd, Dean (1908)

WASHINGTON

University of Washington, College of Pharmacy, Seattle: Forest J. Goodrich, Dean (1905).

State College of Washington, School of Pharmacy, Pullman: P. E. Dirstine, Dean (1912).

WEST VIRGINIA

West Virginia University, College of Pharmacy, Morgantown: J. Lester Hopman, Director (1920).

WISCONSIN

University of Wisconsin, School of Pharmacy, Madison: Arthur H. Uhl, Dean (1900).

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